

**FINAL DRAFT*****Sent Via Email***

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**PROPOSAL FOR NEVADA ENVIRONMENTAL RESPONSE TRUST  
2019 INITIAL BUDGET**

Dear Mr. Jay Steinberg, Mr. Andy Steinberg, Mr. Steve Clough, and Mr. Brian Loffman:

December 20, 2018

**1.0 Introduction**

Ramboll US Corporation ("Ramboll") is pleased to provide this initial scope of work and budget estimate for anticipated consulting services in 2019 pertaining to the Nevada Environmental Response Trust ("NERT" or the "Trust") Site in Henderson, Nevada. The proposed scope of work is based on our recent discussions with you and our current understanding of the Trust's needs and the associated anticipated level of effort to complete the proposed tasks. The budget estimates reflect Ramboll's commitment to use local Henderson staff, when possible. We appreciate the opportunity to provide continued service to the Trust and look forward to working with you in 2019.

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**1.1 Organization**

This proposal is organized into the following Sections.

- Section 1.0 provides an introduction and the organization of this document;
- Section 2.0 summarizes 2018 approved tasks that have rollover budgets for work to be completed in 2019;
- Section 3.0 summarizes new budgets for continuing tasks;
- Section 4.0 is a closing statement; and
- Attachment A provides detailed budget estimates for each task presented in Section 3.0.

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### Attachment A

#### 2019 Task Budget Estimates

Table 1 below summarizes the tasks in this proposal and indicates which section of this proposal each task is described.

TABLE 1: SUMMARY OF TASKS			
Task	Title	Section of Proposal	Initial 2019 Budget
General Site Operations			
F03	Site Management Plan	3 – Continuing Task	\$34,000
F04	Consent Agreement Scheduling and Reporting	3 – Continuing Task	\$42,000
F05A	NDEP Relations	3 – Continuing Task	\$12,000
F05B	Stakeholder Relations	3 – Continuing Task	\$210,000
Leasehold / Off-Site Operations			
G02	Sale Parcel: Treco & Parcel E Coordination	2 – Rollover Task	\$112,000
GW & GWETS Compliance / Monitoring / Reporting			
H02	Groundwater Monitoring and Field Oversight: SAP Revision and GWE Evaluation	2 – Rollover Task	\$39,000
H04	Data Verification and Management	3 – Continuing Task	\$300,000
H05	Data Evaluation and Reporting	3 – Continuing Task	\$563,000
H07	Monitoring Well Repairs	3 – Continuing Task	\$125,000
H08	Database Management, Maintenance, and Accessibility	3 – Continuing Task	\$285,000
GWETS Compliance and Reporting			
J02	Permit Compliance and Reporting	3 – Continuing Task	\$125,000
J03	GWETS Data Management and Evaluation	3 – Continuing Task	\$95,000
Remedial Investigation Planning / Strategy (NERT Lead)			
L01	Community Involvement	3 – Continuing Task	\$79,000
L09	Weir Dewatering Treatment: NPDES Permit Compliance	2 – Rollover Task	\$20,000
L20	RI/FS QAPP Revision	2 – Rollover Task	\$14,000
Remedial Investigation Implementation (NERT Lead)			
M01	Soils Investigation	2 – Rollover Task	\$125,000
M03	RI Phase 2 Field Investigation	2 – Rollover Task	\$539,000
M06A	Human Health Risk Assessments	3 – Continuing Task	\$646,000
M06B	Ecological Risk Assessments	3 – Continuing Task	\$1,752,000
M07	Groundwater Modeling	2 – Rollover Task	\$320,000
M08	RI Data Evaluation and Reporting	3 – Continuing Task	\$1,712,000
M18	ZVI-Enhanced In-Situ Groundwater Treatability Study Implementation	2 – Rollover Task	\$600,000
M20	Barrier Wall Geophysical Integrity Field Evaluation Implementation	2 – Rollover Task	\$16,000
M22	RI Phase 3 Field Investigation	2 – Rollover Task	\$1,140,000
M23	Soil Background Concentration Study Implementation	2 – Rollover Task	\$55,000

<b>TABLE 1: SUMMARY OF TASKS</b>			
<b>Task</b>	<b>Title</b>	<b>Section of Proposal</b>	<b>Initial 2019 Budget</b>
M24	In-Situ Bioelectrochemical Treatability Study Implementation	2 – Rollover Task	\$200,000
M25	AWF Capture Evaluation and UMCf Matrix Diffusion Evaluation Implementation	2 – Rollover Task	\$279,000
NERT Regional GW Planning / Strategy			
N02C	NERT Participation in Regional Tasks	2 – Rollover Task	\$17,000
NERT General and Ongoing Site Operations			
O05A	Cost Recovery and Allocation	3 – Continuing Task	\$20,000
<b>Total</b>			<b>\$9,476,000</b>

## 2.0 Rollover Budgets for In-Progress Tasks

This section provides the scope of work for project tasks which were initiated in 2018 or earlier and are still in progress at the end of 2018 with no change in scope and no increase in budget for 2019. The anticipated 2018 budget used is based on a current (mid-December 2018) reasonable projected estimate of charges through December 31, 2018 on each project task. Rollover budget amounts provided herein are estimated and the actual budgets for each task will not exceed the previously established budgets, unless amended by the Trust. At the direction of the Trust, work in progress at the end of 2018 on the tasks in this section will continue without stoppage or delay in January 2019.

### G02 – Sale Parcel: Treco and Parcel E Coordination

Task Description: Various activities pertaining to Parcels A through H at the NERT site are in progress. The ownership of Parcels A and B was transferred from the Trust to Treco in December 2013 and subsequently to Jasmine Development in January 2018. Parcels C, D, F, G, and H are currently owned by the Trust; however, the ownership of these parcels should be transferred to Treco within six months after obtaining “no further action” (NFA) determinations from NDEP for these parcels. Requests for NFA determinations for Parcels C, D, F, G, and H were submitted to NDEP in September and October 2018. Parcel E, which contains a portion of the currently operating Olin Chlor Alkali/Stauffer/Syngenta/ Montrose (OSSM) groundwater treatment system, is owned by the Trust and anticipated to remain owned by the Trust.

Under this task, Ramboll will provide consulting assistance on an as needed basis to the Trust pertaining to Parcels A through H. As directed by the Trust, various activities are anticipated to include providing consulting assistance to the Trust to assist with their communications with Treco and other parties related to the sale of Parcels C, D, F, G and H and pertaining to the establishment of easements and future access to these parcels once sold; and providing consulting assistance to the Trust to assist with negotiations with the OSSM companies for an easement for utilities and infrastructure on Parcel E and access by other parties to Parcel E.

Rollover and Continuation of 2018 Subtasks: This scope of work is a continuation of the 2018 scope of work for this task. In 2018, Ramboll managed activities using two internal subtasks: G02A for activities pertaining to Parcels A, B, C, D, F, G, & H; and G02B for activities pertaining to Parcel E. For G02A, several subtasks have been completed and are removed from the 2019 scope of work for this task. These subtasks involved relocating, retrofitting, sampling, and/or decommissioning monitoring wells and grading/vegetation removal associated with the NERT easement on Parcels A and B. For G02A, one subtask, specifically the decommissioning of up to eight monitoring wells owned by the OSSM companies located on Parcels A and B, will not be implemented; instead, budget approved for this subtask will be reallocated to complete new 2019 subtasks, including 1) providing consulting assistance to the Trust to assist with the establishment of easements and future access to Parcels C, D, F, G and H, once sold, and 2) relocating, retrofitting, sampling, and/or decommissioning monitoring wells associated with the new easements on Parcels C, D, F, G and/or H. For G02B, no subtasks have been added or

removed. This task includes a rollover budget of \$97,000 on G02A and a rollover budget of \$15,000 on G02B, for a total rollover budget of \$112,000.

Assumptions:

- The anticipated level of effort for this task is uncertain and the budget estimate for this task in 2019 is based on the budget remaining at the end of 2018. This budget estimate may need to be modified based on the nature of consulting assistance requested by the Trust.
- No travel is budgeted for this task.

Anticipated Schedule: Work on this task will proceed throughout the year, as directed by the Trust. There are no NDEP submittals anticipated for this task.

Budget Information: The estimated budget of \$112,000 for this task is based on an estimate of the available budget on this task remaining at the end of 2018. The proposed budget includes \$30,000 for drilling and well development subcontractor costs. No contingency has been added to the budget.

<b>G02 – Sale Parcel: Treco and Parcel E Coordination</b>		
2018 Approved Budget <sup>1</sup>	Anticipated 2018 Budget Used by 12/31/2018	2019 Rollover Budget
\$128,000	\$16,000	\$112,000

<sup>1</sup> Includes \$113,000 from subtask G02A and \$15,000 from subtask G02B.

## **H02 – Groundwater Monitoring and Field Oversight**

Task Description: Ramboll's subtasks on Task H02 include a revision to the Remedial Performance Groundwater Sampling and Analysis Plan (SAP) and a re-evaluation and revision, if necessary, of the groundwater elevation monitoring program. The SAP was submitted to NDEP on March 27, 2017 and approved by NDEP on April 7, 2017. The purpose of the SAP is to provide guidance for implementing the groundwater monitoring program at the Site, summarize the groundwater monitoring program, and provide specific information on monitoring well locations, sampling procedures, and quality assurance procedures. Since the time the SAP was originally submitted and approved, several changes have occurred in the groundwater monitoring program, including but not limited to 1) the addition and removal of several monitoring wells to and from the program, 2) deployment of transducers throughout the entire NERT RI Study Area, and 3) initiation of monthly sampling at several locations in Las Vegas Wash. Under this task, the SAP will be revised to include these updates to the monitoring program and will be submitted to NDEP as Revision 1. As part of this revision, the current transducer network will also be re-evaluated and revised, if necessary, to better monitor groundwater elevation trends throughout the entire NERT RI Study Area.

**Rollover and Continuation of 2018 Subtasks:** This 2019 scope of work is a continuation of the 2018 scope of work for this task, which was authorized by the Trust on November 13, 2018. No subtasks have been added or removed. This task includes a rollover budget of \$39,000 to complete the remaining subtasks from the 2018 scope of work, including:

- Prepare and submit a revised SAP to NDEP that is updated to reflect the current monitoring program and sampling procedures; and
- Re-evaluate the current transducer network and propose revisions to the transducer network as part of the SAP to better monitor groundwater elevation trends throughout the entire NERT RI Study Area.

**Assumptions:**

- The budget for corresponding with NDEP and responding to NDEP's comments assumes a moderate level of effort (i.e., no significant additional data generation/analysis, graphics, meetings, or other deliverables beyond a Response to Comment letter).
- Any revisions to the transducer network will be documented as part of the revised SAP. A separate deliverable discussing the transducer network and associated monitoring procedures will not be prepared.
- No travel is budgeted for this task.

**Anticipated Schedule:** The work on this task will be implemented in the first half of 2019. The following NDEP deliverable will be prepared:

- Second Quarter 2019: The Remedial Performance Groundwater Sampling and Analysis Plan, Revision 1.

**Budget Information:** The estimated budget of \$39,000 for this task is based on an estimate of the available budget on this task remaining at the end of 2018. There are no subcontracted services for this task and no contingency has been added to the budget. This work is anticipated to be completed within the first half of 2019 with no task specific rollover into 2020.

<b>H02 – Groundwater Monitoring and Field Oversight</b>		
2018 Approved Budget	Anticipated 2018 Budget Used by 12/31/2018	2019 Rollover Budget
\$40,000	\$1,000	\$39,000

**L09 – Weir Dewatering Treatment: NPDES Permit Compliance**

**Task Description:** This task includes continuing effort associated with compliance assistance for NPDES Permit #NV0024228, which was issued by NDEP in August 2017 for the treatment and

discharge of water generated by SNWA through its weir construction efforts. The Weir Treatment Plant operated from January through August 2018, when decommissioning of the plant started. Efforts on this task currently include providing NPDES permit compliance assistance during plant decommissioning and termination of the NPDES permit.

Rollover and Continuation of 2018 Subtasks: This scope of work is a continuation of the 2018 scope of work for this task. No subtasks have been added or removed. This task includes a rollover budget of \$20,000 to complete any remaining subtasks from the 2018 scope of work, including:

- Preparation and submittal of the 2018 Annual NPDES report and 4<sup>th</sup> quarter DMRs, due to NDEP-BWPC by January 28, 2019; and
- Preparation and submittal of the Notice of Termination ("NOT") to NDEP-BWPC for the termination of this NPDES permit.

Assumptions:

- This task does not include permitting and compliance assistance for any other permit besides NPDES Permit #NV0024228.
- This scope of work assumes that NDEP-BWPC will not request additional deliverables (e.g., Technical Memorandums, etc.) associated with termination of the NPDES permit.
- For budgeting purposes, it is assumed that no travel will be needed for the remainder of this task.

Anticipated Schedule: The work on this task will be implemented as needed based on the timing of plant decommissioning and termination of the permit. The following compliance deliverables are anticipated:

- January 2019: 2018 Annual NPDES report and 4<sup>th</sup> Quarter 2018 DMRs (submitted electronically via NetDMR), submitted to NDEP-BWPC; and
- First Quarter 2019: Notice of Termination ("NOT") for NPDES Permit #NV0024228, submitted to NDEP-BWPC.

Budget Information: The estimated budget of \$20,000 for this task is based on an estimate of the available budget on this task remaining at the end of 2018. There are no subcontracted services for this task and no contingency has been added to the budget. This work is anticipated to be completed within the first quarter of 2019 with no task specific rollover into 2020.

<b>L09 – Weir Dewatering Treatment: NPDES Permit Compliance</b>		
Total 2018 Approved Budget	Anticipated 2018 Budget Used by 12/31/2018	2019 Rollover Budget
\$68,000	\$48,000	\$20,000



## L20 – RI/FS QAPP Revision

**Task Description:** The Remedial Investigation (RI) Quality Assurance Project Plan (QAPP), Revision 2, was submitted to NDEP on October 31, 2017. On July 13, 2018, NDEP issued updated data validation and Electronic Data Deliverable (EDD) guidance. Under this task, the RI QAPP will be revised to be consistent with NDEP data validation and EDD guidance, and will be submitted to NDEP as Revision 3.

**Rollover and Continuation of 2018 Subtasks:** This scope of work is a continuation of the 2018 scope of work for this task, which was authorized by the Trust on November 13, 2018. While Task L20 was established in 2017, this task was not included in the initial 2018 annual budget. This task includes a rollover budget of \$14,000 to complete the RI QAPP revision and submittal to NDEP. Under this task, the QAPP will be revised for consistency with NDEP data validation and EDD guidance, dated July 13, 2018. The QAPP will also be revised as needed due to RI Modifications and changes to laboratory Standard Operating Procedures. This scope also includes responding to NDEP comments on the revised QAPP submittal.

### Assumptions:

- The budget for corresponding with NDEP and responding to NDEP's comments assumes a minimal level of effort (i.e., no significant additional data generation/analysis, graphics, meetings, or other deliverables beyond a Response to Comment letter).
- Additional NDEP data validation and EDD guidance are not issued before the revised QAPP is submitted to NDEP.
- No travel is budgeted for this task.

**Anticipated Schedule:** The work on this task will be implemented in the first half of 2019. The following NDEP deliverable will be prepared:

- First Quarter 2019: Quality Assurance Project Plan (QAPP), Revision 3.

**Budget Information:** The estimated budget of \$14,000 for this task is based on an estimate of the available budget on this task remaining at the end of 2018. There are no subcontracted services for this task and no contingency has been added to the budget.

<b>L20 – RI/FS QAPP Restructuring and Revision</b>		
2018 Approved Budget	Anticipated 2018 Budget Used by 12/31/2018	2019 Rollover Budget
\$15,000	\$1,000	\$14,000

## M01 – Soils Investigation

Task Description: This scope of work includes field investigation activities as part of the original NERT Site and Off-site NERT RI Study Areas investigation (now referred to as the Phase 1 RI) to perform site characterization to address soil data gaps, obtain necessary data to conduct the human health and ecological risk evaluations, and support the development and evaluation of remedial alternatives. These efforts were initiated and mostly completed in 2015; however, one remaining subtask, Area 1 (the former AP-5 Pond) data gap investigation, was initiated in late 2018 and scheduled to be completed in early 2019.

Phase 2 RI Modification No. 15, dated November 14, 2018 and approved by NDEP on November 15, 2018, modified the original Task M01 scope of work to include additional deeper investigation borings and deeper monitoring wells in Area 1 (the former AP-5 Pond) at the NERT Site to better delineate the vertical extent of perchlorate and other COPCs in the subsurface. This scope of work for Task M01 in 2019 includes continued implementation of the field activities in Area 1 as initially scoped in 2015 and as modified with Phase 2 RI Modification No. 15 in November 2018.

Rollover and Continuation of 2018 Subtasks: This task includes a rollover budget of \$125,000 to complete the following remaining subtasks from the 2018 scope of work:

- Monitoring well development, groundwater sampling, laboratory analyses, field and analytical data compilation, and data validation.

### Assumptions:

- Soil boring drilling, monitoring well installation, soil sampling, and grab groundwater sampling will be completed by December 2018.

Anticipated Schedule: The field program implementation is anticipated to be complete in January 2019. Field and analytical data compilation, laboratory analyses, and data validation for this task are anticipated to be completed during First Quarter 2019. No NDEP submittals are anticipated for this task, as the results from this task will be incorporated into the forthcoming OU-1/OU-2 RI Report being prepared under Task M08.

Budget Information: The estimated budget of \$125,000 for this task is based on an estimate of the available budget on this task remaining at the end of 2018. The proposed budget includes \$106,000 for well development, groundwater sampling, analytical laboratory, and data validation subcontractor costs. This work is anticipated to be completed within 2019 with no task specific rollover into 2020.

<b>M01 – Soils Investigation</b>		
Total 2018 Approved Budget	Anticipated 2018 Budget Used by 12/31/2018	2019 Rollover Budget
\$292,000	\$167,000	\$125,000

### **M03 – RI Phase 2 Field Investigation**

Task Description: The scope of work for 2019 includes efforts that are currently in progress to complete the Phase 2 RI Field Investigation tasks and related Phase 2 RI Modifications. Additional Phase 2 RI modifications are not anticipated at this time.

Rollover and Continuation of 2018 Subtasks: This task includes a rollover budget of \$539,000 to complete the following remaining subtasks from the 2018 scope of work:

- Installation of Phase 2 RI Modification No. 11 soil gas sampling probes (OU-2), collection of soil gas samples (OU-1/OU-2), and abandonment of soil gas probes.
- Phase 2 RI Modification No. 12 collection of soil gas and groundwater samples, and abandonment of soil gas probes.
- Installation and development of Phase 2 RI Modification No. 15 groundwater monitoring wells.
- Collection of groundwater samples from Phase 2 RI Modification Nos. 13 and 15 new monitoring wells.
- Completion of hydraulic conductivity testing and nuclear magnetic resonance (NMR) logging of Phase 2 Modification Nos. 13 and 15 new monitoring wells.
- Boring log gINT data entry, analytical data validation, and data management for Phase 2 RI data.

Assumptions:

- Approval is received from the City of Henderson to access the OU-2 soil gas probe locations.

Anticipated Schedule: The work on this task will be implemented in the first quarter of 2019. No NDEP submittals are anticipated for this task, as the results from this task will be incorporated into the forthcoming OU-1/OU-2 RI Report being prepared under Task M08.

Budget Information: The estimated budget of \$539,000 for this task is based on an estimate of the available budget on this task remaining at the end of 2018. The estimated budget includes approximately \$35,000 for drilling, water sampling, soil gas sampling, waste management, and surveying subcontractors, and approximately \$149,500 for analytical testing and data validation subcontractors. It is anticipated that activities on this task will be completed in 2019 with no task specific rollover into 2020.

<b>M03 – RI Phase 2 Field Investigation</b>		
2018 Approved Budget	Anticipated 2018 Budget Used by 12/31/2018	2019 Rollover Budget
\$1,596,000	\$1,057,000	\$539,000

## **M07 – Groundwater Modeling**

Task Description: The scope of work for 2019 includes efforts that are currently in progress pertaining to the development and use of the groundwater model for the NERT RI Study Area. The NERT groundwater model is a comprehensive model of the southeastern portion of the Las Vegas Groundwater Basin that synthesizes the subsurface investigation data collected by all parties, including the Trust and its consultants, AMPAC/Endeavour and other BMI companies, and public agencies (e.g., SNWA, USGS, NDEP, Bureau of Reclamation). The model is a key tool for supporting the NERT RI/FS, ongoing optimization of the GWETS, and other related activities. The model was designed to include all potential source areas of perchlorate and other chemicals of concern, so that the model can be used to better understand the relative contribution of different source areas to discharges into Las Vegas Wash and impacts to other receptors. In addition to providing a tool for synthesizing multiple data sources and further developing the conceptual site model, the groundwater model can be used for predicting the future impacts to receptors such as Las Vegas Wash under alternative remediation strategies and technologies. This provides a way of systematically comparing the relative effectiveness and timeframe of these alternatives in meeting remedial action objectives.

The focus of the modelling work in 2019 will be to incorporate new Downgradient Study Area Investigation and Phase 2 and 3 RI data and to expand the capabilities of the model to include contaminant transport. The transport model will be used during the FS to predict the effect of remedial measures on mass discharge to Las Vegas Wash and remediation timeframes. The model will also be used to calculate the newly expanded performance metrics, as described in the NDEP-approved *RI Study Area Mass Estimate and Expanded Performance Metrics Technical Approach Technical Memorandum*, dated October 5, 2017, to evaluate the effectiveness of the existing groundwater extraction and treatment system and potential future remedial measures.

Rollover and Continuation of 2018 Subtasks: This scope of work is a continuation of the 2018 scope of work for this task. No subtasks have been added or removed. This task includes a rollover budget of \$320,000 to complete the remaining subtasks from the 2018 scope of work, including:

- Update the 3D Geological Model, as additional data becomes available, to incorporate borehole lithology and well construction data from subsurface investigations including the Phase 2 and Phase 3 RI, the Downgradient Study Area Investigation, and pilot tests and treatability studies.

- Develop animations for visualizing updates to the 3D Geological Model for presentation to NDEP and/or the stakeholders and update the Phase 5 transient flow model with the updates to the 3D Geological Model.
- Develop the Phase 6 Model including fate and transport capabilities for perchlorate using MT3D-USGS representing current conditions.
- Prepare the Phase 6 Model documentation report. Address comments received from NDEP on the Phase 5 model (letter dated June 26, 2017) including evaluating density effects on groundwater flow, reviewing permitted groundwater rights within the model area, and refining the approach to simulating concentrations in Las Vegas Wash.
- Prepare a presentation summarizing the Phase 6 model development and attend an in-person meeting with NDEP and the Trust in 2019. Note that a Stakeholder Technical Roundtable Meeting pertaining to the groundwater model is also planned for 2019. Preparation for and attendance at this meeting (including travel expenses) will be performed under the Stakeholder Relations Task F05B.

Assumptions:

- It is assumed that three Ramboll staff will travel to the Site once during 2019 for the in-person meeting with NDEP and the Trust, as described above.

Anticipated Schedule: The work on this task will be implemented on an ongoing basis throughout 2019. One NDEP deliverable is anticipated:

- Third Quarter 2019: Phase 6 Model Documentation Report

Budget Information: This task includes a rollover budget of \$320,000 to complete the remaining subtasks from the 2018 scope of work. The estimated rollover budget for this task is based on an estimate of the available budget on this task remaining at the end of 2018. There are no subcontracted services for this task and no contingency has been added to the budget. This work is anticipated to be completed within 2019 with no task specific rollover into 2020.

<b>M07 – Groundwater Modeling</b>		
2018 Approved Budget	Anticipated 2018 Budget Used by 12/31/2018	2019 Rollover Budget
\$550,000	\$230,000	\$320,000

## **M18 – ZVI-Enhanced In-Situ Groundwater Treatability Study Implementation**

Task Description: This task involves the implementation of the *Galleria Road ZVI-Enhanced Bioremediation Treatability Study Work Plan* dated September 29, 2017 (approved by NDEP on October 26, 2017) and *Treatability Study Modification No. 5* dated November 5, 2018 (approved by NDEP on November 15, 2018). The implementation of the work plan is being performed in

two phases. This scope of work and budget is for completing remaining Phase 1 activities. Phase 2 (not included in this scope of work and budget) will consist of implementing a field test.

Approximately forty percent (40%) of Task M18 has been completed. The scope of work for 2019 includes efforts that are currently in progress to complete the Phase 1 subtasks as described below.

Rollover and Continuation of 2018 Subtasks: This task includes a rollover budget of \$600,000 to complete the following remaining Phase 1 subtasks from the 2018 scope of work:

- Bench-scale testing at the University of Nevada Las Vegas (UNLV).
- Preparing a work plan addendum proposing a field testing plan including a proposed ZVI layout within each test gallery, ZVI test composition, use of other amendments, and finalized performance monitoring methods and frequencies.
- Installation, development, aquifer testing, sampling, analytical testing, and data validation for four deeper monitoring wells and one additional shallow well as proposed and described in *Treatability/Pilot Study Modification No. 5*, which was submitted to NDEP on November 5, 2018 and approved by NDEP on November 14, 2018.
- Data evaluation and data management related to the above tasks.
- Ongoing collaboration with Tetra Tech on their companion treatability study along Galleria Drive.

Assumptions:

- Following completion of the pre-design field investigation and bench-scale testing (Phase 1), a work plan addendum will be prepared and submitted to NDEP proposing the Phase 2 field testing plan as described in the scope of work above (assuming favorable results from the bench-scale testing). Budget for detailed engineering design and implementation of the field test (Phase 2) is not included herein.
- Prior to submittal of the work plan addendum, a presentation will be prepared and presented in Henderson, NV to report the Phase 1 findings to NDEP and summarize the work plan addendum.
- The budget for corresponding with NDEP and responding to NDEP's comments on the work plan addendum assumes a moderate level of effort (i.e., no significant additional data generation/analysis, graphics, meetings, or other deliverables beyond a Response to Comment letter).

Anticipated Schedule: The work on this task will be implemented during the first half of 2019. Implementation of a Phase 2 field test (not included in this scope of work and budget) would be performed under a separate scope and budget to be prepared in 2019. One NDEP deliverable is anticipated:

- Second Quarter 2019: Phase 2 Work Plan Addendum

**Budget Information:** The estimated budget of \$600,000 for this task is based on an estimate of the available budget on this task remaining at the end of 2018 with no contingency added to the budget. The total 2018 approved budget of \$1,182,000 included approximately \$295,000 for utility clearance, drilling, water sampling, waste management, surveying, and geophysical testing subcontractors; approximately \$109,000 for analytical testing and data validation subcontractors, and approximately \$315,000 for the bench-scale testing to be performed at UNLV. It is anticipated that Phase 1 activities on this task will be completed in 2019 with no task specific rollover into 2020. As discussed above, following successful completion of the Phase 1 activities, a work plan addendum will be prepared and submitted to NDEP proposing a Phase 2 field test (not included in this scope and budget). Following this, a Phase 2 scope of work and budget estimate will be developed to implement the approved work plan addendum.

<b>M18 – ZVI-Enhanced In-Situ Groundwater Treatability Study Implementation</b>		
Total 2018 Approved Budget	Anticipated 2018 Budget Used by 12/31/2018	2019 Rollover Budget
\$1,182,000	\$582,000	\$600,000

#### **M20 – Barrier Wall Geophysical Integrity Field Evaluation Implementation**

**Task Description:** The Barrier Wall Integrity Field Evaluation Work Plan was submitted to NDEP on September 7, 2017 and approved by NDEP on October 3, 2017. The scope of work for implementation of the work plan was included in the NERT Budget Amendment 2017-01, which was submitted to NDEP on October 10, 2017 and approved by NDEP on December 8, 2017. The implementation of the study described in the work plan began with initial planning and mobilization efforts in late 2017 and will continue into first quarter 2019. The original scope of work for this task included: 1) Conducting a geophysical survey to detect, locate and survey the top of the barrier wall; 2) Conducting a large-scale electromagnetic survey of the barrier wall using Willowstick™ technology to identify preferential flow paths below the water table; 3) Locating and drilling wells for monitoring and injection of tracers; 4) Performing a tracer study by injecting tracers upgradient of the barrier wall and monitoring for tracers on the downgradient side of the barrier wall; 5) Conducting CPT testing of the barrier wall at approximately 50 locations in areas suspected of having preferential groundwater flow; and 6) Documenting results in the OU-1/OU-2 RI Report.

**Rollover and Continuation of 2018 Subtasks:** This scope of work is a continuation of the 2018 scope of work for this task. No subtasks have been added or removed. This task includes a rollover budget of \$16,000 to complete the remaining subtasks, including:

- Complete sampling associated with the barrier wall tracer test.

- Document results of this study in the forthcoming OU-1/OU-2 RI Report.

Assumptions:

- No travel is budgeted for this task to complete the remaining subtasks in 2019.
- This scope of work does not include responding to NDEP comments on the results of the barrier wall integrity study (within the OU-1/OU-2 RI Report). It is assumed that responding to NDEP comments and providing a revised deliverable, if needed, will be performed under Task M08.

Anticipated Schedule: Sampling is scheduled to continue through January 2019. Results will be incorporated into the OU-1/OU-2 RI report (under Task M08). No discrete NDEP submittals are anticipated for this task.

Budget Information: The estimated budget of \$16,000 for this task is based on an estimate of the available budget on this task remaining at the end of 2018. There are no subcontracted services to complete the remaining subtasks in 2019, except minimal laboratory analytical testing services. This work is anticipated to be completed in first quarter 2019 with no task specific rollover into 2020.

<b>M20 – Barrier Wall Geophysical Integrity Field Evaluation Implementation</b>		
2018 Approved Budget	Anticipated 2018 Budget Used by 12/31/2018	2019 Rollover Budget
\$542,500	\$526,500	\$16,000

## **M22 – RI Phase 3 Field Investigation**

Task Description: The 2019 scope of work for this task includes implementing remaining field efforts pertaining to the Phase 3 RI, specifically implementation of Phase 3 Modification No. 4 (Transect D) and Modification No. 5 (Seep Well Field Area). The scope of work for the Modification Nos. 4 and No. 5 efforts are detailed in technical memorandums which were submitted to and approved by NDEP in November 2018. Two additional Phase 3 RI modifications (Modification No. 6 for AECOM Downgradient Study Area Phase 2 well installation and Modification No. 7 for collection of additional soil gas and groundwater data for the OU-3 BHRA) are anticipated in 2019. Budget approval from the Trust for these additional Phase 3 RI Modifications is anticipated to be provided via 2019 work authorizations, once the scope of work for the modifications are determined. Additional Phase 3 RI modifications are not anticipated at this time.

Rollover and Continuation of 2018 Subtasks: This scope of work is a continuation of the 2018 scope of work for this task. No subtasks have been added or removed. This task includes a



rollover budget of \$1,140,000 to complete the remaining subtasks from the 2018 scope of work, including:

- Completing the implementation of RI Phase 3 Modification No. 4 field work, including drilling soil borings, drilling and installation of groundwater monitoring wells, soil and groundwater sampling, and the completion of a hydraulic testing program and/or NMR logging. (\$544,000)
- Completing the implementation of RI Phase 3 Modification No. 5 field work, including drilling soil borings, drilling and installation of groundwater monitoring wells, soil and groundwater sampling, and the completion of a hydraulic testing program and/or NMR logging. (\$196,000)
- Analytical testing and data management. (\$384,000)
- Remaining 2018 contingency funds. (\$16,000)

Assumptions:

- It is not anticipated that significant costs will be incurred for delays in access with BEC, City of Henderson, Tuscany Master Association, and Chimera Golf Club (and other organizations if necessary), as access procedures are in place and have been utilized throughout 2018.

Anticipated Schedule: The work on this task will be implemented in the first half of 2019. No NDEP submittals are anticipated for this task, as the results from this task will be incorporated into the forthcoming OU-1/OU-2 RI Report and OU-3 RI Report (including results from Modification No. 4, No. 5, and No. 6) being prepared under Task M08.

Budget Information: The estimated budget of \$1,140,000 for this task is based on an estimate of the available budget on this task remaining at the end of 2018. The estimated budget includes approximately \$550,000 for drilling, sampling, surveying, analytical, and data validation subcontractors. This task includes approximately \$16,000 of remaining 2018 contingency, which will only be utilized upon Trust approval. This work is anticipated to be completed within 2019 with no task specific rollover into 2020.

<b>M22 – RI Phase 3 Field Investigation</b>		
2018 Approved Budget	Anticipated 2018 Budget Used by 12/31/2018	Anticipated 2018 Rollover Budget
\$4,440,000	\$3,300,000	\$1,140,000

### M23 – Soil Background Concentration Study Implementation

**Task Description:** This task involves the implementation of the Soil Background Concentration Study Work Plan, dated July 17, 2017 (approved by NDEP on October 17, 2017). The scope of work for 2019 includes efforts that are currently in progress to complete the Soil Background Concentration Study report, which will be included as an appendix to the OU-1/OU-2 RI Report.

**Rollover and Continuation of 2018 Subtasks:** This scope of work is a continuation of the 2018 scope of work for this task. No subtasks have been added or removed. This task includes a rollover budget of \$55,000 to complete preparation of the report for submittal to NDEP and to respond to NDEP comments on the report.

**Assumptions:**

- The budget for corresponding with NDEP and responding to NDEP's comments on the Soil Background Concentration Study report assumes a moderate level of effort (i.e., no significant additional data generation/analysis, graphics, meetings, or other deliverables beyond a Response to Comment letter).
- No travel is budgeted for this task.

**Anticipated Schedule:** The work on this task will be implemented during the first half of 2019. One NDEP deliverable is anticipated:

- Second Quarter 2019: Soil Background Concentration Study report

**Budget Information:** The estimated budget of \$55,000 for this task is based on an estimate of the available budget on this task remaining at the end of 2018 and includes the 15% contingency (\$23,000) in the 2018 approved budget. The contingency will only be utilized upon Trust approval. This work is anticipated to be completed within 2019 with no task specific rollover into 2020.

<b>M23 – Soil Background Concentration Study Implementation</b>		
2018 Approved Budget	Anticipated 2018 Budget Used by 12/31/2018	2019 Rollover Budget
\$178,000	\$123,000	\$55,000

### M24 – In-Situ Bioelectrochemical Treatability Study Implementation

**Task Description:** This task involves the implementation of the *In-Situ Bioelectrochemical Laboratory-Scale Treatability Study Work Plan* dated May 7, 2018 (approved by NDEP on May 14, 2018).

Approximately forty percent (40%) of Task M24 has been completed. The scope of work for 2019 includes efforts that are currently in progress to complete the subtasks initiated in 2018 as described below.

Rollover and Continuation of 2018 Subtasks: This task includes a rollover budget of \$200,000 to complete the following remaining subtasks from the 2018 scope of work:

- Performing laboratory-scale testing at Colorado State University (CSU);
- Data management and verification;
- Overseeing the laboratory-scale testing;
- Evaluating and reporting the data; and
- Preparing a conceptual field testing plan (a work plan addendum) if warranted based on the laboratory-scale results.

Assumptions:

- The laboratory-scale testing program may be refined as the testing progresses, potentially altering the budget. Material changes to the scope will be discussed with the Trust and a formal budget amendment request will be prepared as necessary.
- Following completion of the laboratory-scale testing, a work plan addendum will be prepared and submitted to NDEP proposing a conceptual field testing plan (assuming favorable results from the laboratory-scale testing). Budget for engineering design and implementation of the field test is not included herein.
- This scope of work includes budget for corresponding with NDEP and responding to NDEP's comments on the work plan addendum, assuming a moderate level of effort (i.e., no significant additional design, data generation/analysis, graphics, meetings, or other deliverables beyond Response to Comment letters).

Anticipated Schedule: The work on this task will be implemented during the first half of 2019. Implementation of a field test (not included in this scope of work and budget) would be performed under a separate scope and budget to be prepared in 2019. One NDEP deliverable is anticipated:

- Second Quarter 2019: Phase 2 Work Plan Addendum

Budget Information: The estimated budget of \$200,000 for this task is based on an estimate of the available budget on this task remaining at the end of 2018 with no contingency added. The 2018 approved budget of \$427,000 included approximately \$263,000 for the laboratory-scale testing to be performed at CSU. It is anticipated that activities on this task will be completed in 2019 with no task specific rollover into 2020. As discussed above, following successful completion of the laboratory-scale testing, a work plan addendum may be prepared and submitted to NDEP proposing a field test (not included in this scope and budget). Following this,

a scope of work and budget estimate will be developed to implement the approved work plan addendum.

<b>M24 – In-Situ Bioelectrochemical Treatability Study Implementation</b>		
2018 Approved Budget	Anticipated 2018 Budget Used by 12/31/2018	2019 Rollover Budget
\$427,000	\$227,000	\$200,000

### **M25 – AWF Capture Evaluation and UMCf Matrix Diffusion Evaluation Implementation**

Task Description: This scope of work includes the implementation of the Athens Road Well Field Capture Evaluation and Matrix Diffusion Study Work Plan dated September 22, 2017, approved by NDEP on October 3, 2017. The implementation of the work began in June 2018 and will continue during 2019. The initial scope of work for this task included: 1) mobilization for field activities; 2) field investigation activities including drilling, soil sampling, and monitoring well installation; 3) analytical laboratory testing, soil diffusion testing, soil physical property testing, and data management activities; and 4) data analysis and reporting of the results in the OU-1/OU-2 RI report.

Rollover and Continuation of 2018 Subtasks: This scope of work is a continuation of the 2018 scope of work for this task. No subtasks have been added or removed. This task includes a rollover budget of \$279,000 to complete the remaining subtasks from the 2018 scope of work, including:

- Diffusion testing of UMCf soil samples at Dr. Batista's laboratory at UNLV. The through-cell diffusion test method will be used to estimate the effective diffusion coefficients of soil samples.
- Analysis of the test results, providing estimates of hydraulic conductivity, groundwater velocities, vertical hydraulic gradients, vertical distribution of perchlorate, and effective diffusion coefficients. These estimates will be incorporated into a simple focused model of flow and transport that will be used to evaluate the causes of elevated perchlorate concentrations downgradient of the AWF.
- Reporting of the results of the study in the OU-1/OU-2 RI Report.

#### Assumptions:

- The scope of work includes data verification, validation and management efforts related to data obtained from the study.
- No separate report will be prepared since the results will be incorporated into the OU-1/OU-2 RI Report.

**Anticipated Schedule:** The study will be completed in the first quarter of 2019 and the results will be reported in the OU-1/OU-2 RI Report. No discrete NDEP submittals are anticipated for this task.

**Budget Information:** The estimated budget of \$279,000 for this task is based on an estimate of the available budget on this task remaining at the end of 2018. The 2018 approved budget of \$509,000 included a contingency of 15%, only to be utilized upon Trust approval. This work is anticipated to be completed within 2019 with no task specific rollover into 2020.

<b>M25 – AWF Capture Evaluation and UMCf Matrix Diffusion Evaluation Implementation</b>		
2018 Approved Budget	Anticipated 2018 Budget Used by 12/31/2018	2019 Rollover Budget
\$509,000	\$230,000	\$279,000

## **N02C – NERT Participation in Regional Tasks**

**Task Description:** As part of the ongoing RI/FS, Ramboll will continue to provide consulting support as directed by the Trust related to the ongoing investigation in the Downgradient Study Area being performed by AECOM, on behalf of NDEP.

Consulting support on this task is anticipated to include 1) review of AECOM Downgradient Study Area Work Plans and Reports; 2) technical review and evaluation of Downgradient Study Area data and results with consideration of data/results from the NERT Site, NERT Off-site Study Area, and Eastside Study Area; 3) communicating with and contributing information pertaining to the NERT Site and RI Study Areas to NDEP and AECOM; 4) providing input on the planning and implementation of RI activities and the strategic direction of the work in the Downgradient Study Area; and 5) participation in technical meetings with AECOM to discuss and evaluate data and results from the Downgradient Study Area investigation.

**Rollover and Continuation of 2018 Subtasks:** This scope of work is a continuation of the 2018 scope of work for this task. No subtasks have been added or removed. This task includes a rollover budget of \$17,000 to continue the subtasks described above.

### **Assumptions:**

- No travel is budgeted for this task.
- The anticipated level of effort for this task is uncertain and this budget estimate may need to be modified based on the nature of consulting assistance requested by the Trust on this task.

Anticipated Schedule: Work on this task will proceed throughout the year, dependent on the progress of AECOM's work in the Downgradient Study Area. No NDEP submittals are anticipated for this task.

Budget Information: The estimated budget of \$17,000 for this task is based on an estimate of the available budget on this task remaining at the end of 2018. There are no subcontracted services for this task and no contingency has been added to the budget. This work is anticipated to be completed in 2019 with no task specific rollover into 2020.

<b>N02C – NERT Participation in Regional Tasks</b>		
2018 Approved Budget	Anticipated 2018 Budget Used by 12/31/2018	2018 Rollover Budget
\$37,000	\$20,000	\$17,000

## 2.1 Summary of Rollover Budgets for In-Progress Tasks

Table 2 below provides a summary of the rollover budgets for in-progress tasks.

<b>TABLE 2: SUMMARY OF ROLLOVER BUDGETS FOR IN-PROGRESS TASKS</b>				
<b>Task</b>	<b>Title</b>	<b>2018 Approved Budget</b>	<b>Anticipated 2018 Budget Used by 12/31/2018</b>	<b>2019 Rollover Budget</b>
G02	Sale Parcel: Treco and Parcel E Coordination	\$128,000	\$16,000	\$112,000
H02	Groundwater Monitoring and Field Oversight: SAP Revision and GWE Evaluation	\$40,000	\$1,000	\$39,000
L09	Weir Dewatering Treatment: NPDES Permit Compliance	\$68,000	\$48,000	\$20,000
L20	RI/FS QAPP Revision	\$15,000	\$1,000	\$14,000
M01	Soils Investigation	\$292,000	\$167,000	\$125,000
M03	RI Phase 2 Field Investigation	\$1,596,000	\$1,057,000	\$539,000
M07	Groundwater Modeling	\$550,000	\$230,000	\$320,000
M18	ZVI-Enhanced In-Situ Groundwater Treatability Study Implementation	\$1,182,000	\$582,000	\$600,000
M20	Barrier Wall Geophysical Integrity Field Evaluation Implementation	\$542,500	\$526,500	\$16,000
M22	RI Phase 3 Field Investigation	\$4,440,000	\$3,300,000	\$1,140,000

**TABLE 2: SUMMARY OF ROLLOVER BUDGETS FOR IN-PROGRESS TASKS**

<b>Task</b>	<b>Title</b>	<b>2018 Approved Budget</b>	<b>Anticipated 2018 Budget Used by 12/31/2018</b>	<b>2019 Rollover Budget</b>
M23	Soil Background Concentration Study Implementation	\$178,000	\$123,000	\$55,000
M24	In-Situ Bioelectrochemical Treatability Study Implementation	\$427,000	\$227,000	\$200,000
M25	AWF Capture Evaluation and UMCf Matrix Diffusion Evaluation Implementation	\$509,000	\$230,000	\$279,000
N02C	NERT Participation in Regional Tasks	\$37,000	\$20,000	\$17,000
<b>Totals</b>		<b>\$10,004,500</b>	<b>\$6,528,500</b>	<b>\$3,476,000</b>

### 3.0 New Budgets for Continuing Tasks

This section provides the scope of work for project tasks which were initiated in 2018 or earlier and are still in progress at the end of 2018, generally for which previously approved budgets were for efforts through December 31, 2018. Therefore, while some of the tasks described herein are generally similar in scope for 2018, others require a change in scope as the work continues into 2019.

The scopes of work and budget estimates for each task in this section are based on anticipated efforts in 2019. Each task's 2019 budget estimate is provided along with the task's 2018 total approved budget and an estimate of the budget used in 2018. Detailed budget estimates are provided in Attachment A. Unless otherwise noted, it is assumed at this time that the budgets for the project tasks in this section will not rollover into 2020. The 2020 scope of work and budget estimates will be prepared dependent upon future direction from the Trust.

At the direction of the Trust, work in progress at the end of 2018 on the tasks in this section will continue without stoppage or delay in January 2019.

#### F03 – Site Management Plan

Task Description: The Site Management Plan (SMP) provides a decision framework for the management of residual chemicals in soil and groundwater at the NERT Site. The current SMP (Revision 4, dated March 22, 2018) requires preparation and submittal of an Annual Report and preparation and submittal of annual updates/revisions to the SMP. This scope of work includes 1) tracking and recordkeeping of Ramboll site work performed under the SMP and associated SMP compliance activities; 2) completing the annual SMP certification of compliance of Ramboll site activities performed from June 1, 2018 to May 31, 2019 which are subject to SMP requirements; 3) providing assistance to the Trust for preparation and review of the Annual Report for submittal to NDEP; 4) associated correspondence with the Trust regarding compliance with and implementation of the SMP; and 5) preparation and submittal of the required annual update/revisions to the SMP.

Comparison to 2018: This scope of work is similar to the 2018 scope of work for this task. No subtasks have been added or removed.

Assumptions:

- No travel is budgeted for this task.
- It is anticipated that only a moderate level of effort will be required to update the SMP in 2019.
- This scope of work includes production and submittal of the annual update/revisions to the SMP and distribution to all Site Occupants. Consistent with previous years, the scope of work includes a minimal level of effort for responding to NDEP comments on this deliverable.



**Anticipated Schedule:** The work on this task will be implemented on an ongoing basis throughout 2019, with the following NDEP deliverables to be prepared:

- First Quarter 2019: SMP, Revision 5
- Third Quarter 2019: 2018-2019 SMP Annual Report

**Budget Information:** Based on this scope of work, the estimated budget for this task is the same as 2018 at \$34,000. There are no subcontracted services for this task and no contingency has been added to the budget. It is anticipated that activities on this task will continue into 2020, with a new scope of work and budget estimate to be developed for this task in 2020.

<b>F03 – Site Management Plan</b>		
2018 Approved Budget	Anticipated 2018 Budget Used by 12/31/2018	2019 Budget Requested
\$34,000	\$29,000	\$34,000

#### **F04 – Consent Agreement Scheduling and Reporting**

**Task Description:** This scope of work includes tracking the completion of project tasks and submittal of project deliverables against established schedules, and modification of task and deliverable schedules as appropriate. Specifically, this scope of work includes 1) on an approximately quarterly basis as directed by the Trust, reviewing and updating the remedial program schedule (i.e., Gantt chart) and providing the updated schedule information to the Trust; 2) tracking the progress of project deliverables and reviewing and updating the project deliverables schedule; and 3) on a quarterly basis, preparing and providing to the Trust a 12-month project billing (cash flow) forecast.

**Comparison to 2018:** The scope is generally consistent with that of 2018 with an anticipated decreased level of effort in 2019 due to efficiencies gained while completing this effort over the last few years. No subtasks have been added or removed.

**Assumptions:**

- No travel is budgeted for this task.

**Anticipated Schedule:** The work on this task will be implemented on an ongoing basis throughout 2019, with project schedule and cash flow information provided to the Trust on a quarterly basis. No NDEP submittals are anticipated for this task.

**Budget Information:** Based on this scope of work and the anticipated decreased level of effort in 2019, the estimated 2019 budget for this task is \$42,000. There are no subcontracted services for this task and no contingency has been added to the budget. It is anticipated that activities on this task will continue into 2020, with a new scope of work and budget estimate to be developed for this task in 2020.

<b>F04 – Consent Agreement Scheduling and Reporting</b>		
2018 Approved Budget	Anticipated 2018 Budget Used by 12/31/2018	2019 Budget Requested
\$48,000	\$21,000	\$42,000

### **F05A – NDEP Relations**

Task Description: Ramboll will prepare for and participate in various project status update calls with the Trust during 2019. This effort will include agenda updates and preparation for and participation in bi-weekly status update calls with the Trust.

Comparison to 2018 Subtasks: This scope of work is similar to the 2018 scope of work for this task. No subtasks have been added or removed.

Assumptions:

- This task does not include any travel, including attendance at any in-person meetings with the Trust and/or NDEP; and
- Limited staff time is included for agenda updates and preparation for and participation in bi-weekly calls.

Anticipated Schedule: The work on this task will be implemented on an ongoing basis throughout 2019. No NDEP submittals are anticipated for this task.

Budget Information: Based on this scope of work, the estimated 2019 budget for the task is \$12,000. There are no subcontracted services for this task and no contingency has been added to the budget. It is anticipated that activities on this task will continue into 2020, with a new scope of work and budget estimate to be developed for this task in 2020.

<b>F05A – NDEP Relations</b>		
2018 Approved Budget	Anticipated 2018 Budget Used by 12/31/2018	2019 Budget Requested
\$12,000	\$5,000	\$12,000

### **F05B – Stakeholder Relations**

Task Description: Ramboll will prepare for and attend various project status update and technical calls/meetings with the Trust and Stakeholders during 2019. This effort will include:

- 1) In-person attendance at the one-day Annual Stakeholders Meeting and a one-day preparatory meeting with the Trust in Henderson or Las Vegas;

- 2) Participation in three two-hour Quarterly Stakeholder Calls;
- 3) In-person attendance at three one-day Stakeholder Technical Roundtable Meetings. At the direction of the Trust, topics at these meetings are anticipated to include in-progress treatability/pilot studies and/or relevant updates with respect to the ongoing RI including the groundwater model;
- 4) Preparation of posters and other visuals, presentation slides and associated meeting materials, as directed by the Trust, in advance of Stakeholder calls/meetings; and
- 5) Preparation of responses to Stakeholder comments and questions throughout 2019, as requested by the Trust.

Comparison to 2018 Subtasks: No subtasks have been added or removed, although we anticipate an increase in level of effort to 1) prepare posters, science table presentations, and other visuals and meeting materials for the Annual Stakeholders Meeting; and 2) preparation and attendance at three Technical Roundtable Meetings in 2019, compared to two meeting in 2018.

Assumptions:

- For budgeting purposes, it is assumed that up to four Ramboll staff will attend in-person at the one-day Annual Stakeholders Meeting in Henderson/Las Vegas, as well as attend a one-day preparatory meeting with the Trust in Henderson/Las Vegas.
- For budgeting purposes, it is assumed that up to three Ramboll staff will participate in three two-hour Quarterly Stakeholder Calls.
- For budgeting purposes, it is assumed that up to three Ramboll staff will attend in-person at three one-day Stakeholder Technical Roundtable Meetings in Henderson.

Anticipated Schedule: Work on this task will be implemented around the timing of the quarterly Stakeholder meetings/calls and the Stakeholder Technical Roundtable Meetings. Specifics on schedule is forthcoming from the Trust. No NDEP submittals are anticipated for this task.

Budget Information: Based on this scope of work, the estimated 2019 budget for this task is \$210,000. There are no subcontracted services for this task and no contingency has been added to the budget. It is anticipated that activities on this task will continue into 2020, with a new scope of work and budget estimate to be developed for this task in 2020.

<b>F05B – Stakeholder Relations</b>		
Total 2018 Approved Budget	Anticipated 2018 Budget Used by 12/31/2018	2019 Budget Requested
\$180,000	\$144,000	\$210,000

#### H04 – Data Verification and Management

Task Description: Ramboll will continue to provide data verification and data management services for the groundwater monitoring program for the NERT Site, as described in the 2016 Remedial Performance Groundwater Sampling and Analysis Plan (SAP) for the Site (or as revised: SAP, Revision 1, is currently in progress under Task H02). A revised groundwater monitoring program was presented in the 2016 Groundwater Monitoring Optimization Plan (2016 GWMO Plan) and approved by NDEP on June 24, 2016. Based on the revised groundwater monitoring program, which was implemented starting in 2016, approximately 1,300 groundwater level measurements (not including transducer data discussed below) will be collected and over 5,500 groundwater analyses will be performed on over 900 groundwater samples during 2019. This includes eight monthly events, two quarterly events (conducted during first and third quarters), one expanded semi-annual event (conducted during fourth quarter), and one expanded annual event (conducted during second quarter).

This task also includes data verification and data management services related to the monthly surface water sampling of the Las Vegas Wash which began in June 2017 at the request of the Trust. As of 2019, the number of monthly samples has increased, but the semi-annual surface water sampling has been discontinued. Each monthly surface water sampling event consists of 75 analyses performed on 25 samples. Therefore, the total number of analyses for 2019 is 900 to be performed on 300 samples.

The data verification and management effort includes 1) keeping field personnel informed of site activities that could impact data collection efforts; 2) providing support as necessary to Tetra Tech, Envirogen Technologies Inc. (ETI), and the Trust to facilitate the groundwater and surface water sampling efforts by ETI and Tetra Tech; 3) coordinating with field personnel and the laboratory regarding data collection and management matters; 4) processing data, maintaining the database, and performing QA/QC for completeness; 5) performing data verification and coordinating with a third party subcontractor for data validation; 6) reviewing Data Validation Summary Reports (DVSRs), generating Electronic Data Deliverables (EDDs), and preparation and submittal of data deliverables to NDEP; 7) addressing NDEP comments on each DVSR/EDD submittal and submitting revised documents to NDEP; and 8) corresponding with the Trust and NDEP as necessary on data management matters. This scope of work also includes download of data from 43 pressure transducers deployed in 2017 and occasional transducer network maintenance.

Comparison to 2018: The scope is generally consistent with that of 2018. No subtasks have been added or removed. However, the level of effort anticipated in 2019 is increased relative to 2018 as a result of an increased volume of data to verify and manage due to the addition of monitoring wells to the groundwater monitoring program and additional transducer data to be collected from the entire NERT RI Study Area, as will be documented in the forthcoming revised SAP, Revision 1.

Assumptions:

- Tetra Tech will perform all groundwater monitoring program and surface water sampling and measurement activities under a contract directly with the Trust, with the exception of samples taken from extraction wells which will be performed by ETI.
- Tetra Tech will provide oversight and review of field activities and ensure the correct samples are collected for laboratory analysis.
- Tetra Tech will ensure that all deliverables produced by field personnel as part of the groundwater monitoring program are complete, have undergone data verification and Quality Assurance/Quality Control (QA/QC) evaluations, and are approved by a Nevada Certified Environmental Manager (CEM).
- Tetra Tech and ETI will work together to communicate anticipated/unanticipated changes in the sampling program to the Trust and Ramboll, as necessary.
- It is anticipated that this effort can be performed by Ramboll via routine communications with Tetra Tech and ETI and will not require an on-site presence.
- The scope does not include any data verification or management efforts related to data from the ongoing RI.
- Data validation efforts will include data collected from October 2018 through September 2019. Effort for the validation of data collected in October to December 2019 is anticipated to take place in 2020, and is therefore not included in this scope of work and budget estimate.

Anticipated Schedule: Data verification and management efforts associated with groundwater monitoring program data will be completed for each groundwater monitoring program sampling event. This includes eight monthly events, two quarterly events (conducted during first and third quarters), one expanded semi-annual event (conducted during fourth quarter), and one expanded annual event (conducted during second quarter). Data verification and management efforts associated with surface water sampling will be completed for each monthly event and expanded semi-annual event. Data deliverables, including Data Validation Summary Reports (DVSRs) and Electronic Data Deliverables (EDDs), will be submitted with the Semi-Annual Remedial Performance Memorandum and the Annual Remedial Performance Report in April and October 2019, respectively.

Budget Information: Based on this scope of work, the estimated 2019 budget for this task is \$300,000, with no contingency added to the budget. The proposed budget includes approximately \$80,000 for the data validation subcontractor's role. It is anticipated that groundwater monitoring program data verification and management will continue into 2020, with a new scope of work and budget estimate to be developed for this task in 2020.

<b>H04 – Data Verification and Management</b>		
2018 Approved Budget	Anticipated 2018 Budget Used by 12/31/2018	2019 Budget Requested
\$282,000	\$249,000	\$300,000

## **H05 – Data Evaluation and Reporting**

Task Description: Ramboll will continue to provide data evaluation and reporting services for the groundwater and surface water monitoring program for the NERT Site. The primary deliverables associated with this task are the Semi-Annual Remedial Performance Memorandum and Annual Remedial Performance Report, to be submitted to NDEP in April and October 2019, respectively. As mentioned previously, approximately 1,300 groundwater level measurements (not including transducer data) will be collected, over 5,500 groundwater analyses will be performed on over 900 groundwater samples, and 900 analyses will be performed on 300 surface water samples during 2019. The monitoring data will be compiled, reviewed, analyzed, presented, and interpreted in order to describe the dynamic groundwater conditions at the Site and in the downgradient plume. The data reviewed as part of this task will be used to comply with NDEP requirements for groundwater monitoring and reporting as well as support other tasks relying on monitoring data including the following: adjusting the operation of the Groundwater Extraction and Treatment System (GWETS) to optimize remedial performance; informing the planning and implementation of the RI/FS tasks including evaluation of remedial alternatives; and calibrating and refining the groundwater model.

This effort includes 1) conducting a complete technical review and evaluation of data including field and analytical reports; 2) running queries on the NERT database to prepare data summaries; 3) accessing and querying the BMI database (maintained by NDEP), the Southern Nevada Water Authority (SNWA) database of surface water sampling results, and the US Geological Survey database of surface water flow measurements as necessary to supplement NERT data; 4) preparation of tables, figures, maps, and other data presentations necessary for interpretation of data; 5) review of relevant reports prepared by other parties (e.g., from neighboring facilities) to augment our understanding of NERT data; 6) preparation of one (1) Semi-Annual Remedial Performance Memorandum and one (1) Annual Remedial Performance Report for submittal to NDEP, including data analyses, calculations, interpretations, and previously-defined GWETS performance metrics requested by NDEP; 7) compiling and reporting on the environmental footprint of the GWETS and the groundwater monitoring program for the period July 2018 through June 2019, using methodology and formats previously specified by USEPA; 8) corresponding with NDEP on matters relating to groundwater monitoring; and 9) responding to NDEP comments which may be received from NDEP on the 2018 Semi-Annual Remedial Performance Memorandum and the 2018-2019 Annual Remedial Performance Report.

Comparison to 2018: The scope is generally consistent with that of 2018. No subtasks have been added or removed.

Assumptions:

- The scope of the reporting on this task will remain unchanged from 2018.
- The budget for corresponding with NDEP and responding to NDEP's comments on the Semi-Annual Remedial Performance Memorandum and Annual Remedial Performance Report assumes a moderate level of effort (i.e., no significant additional data generation/analysis, graphics, meetings, or other deliverables beyond a Response to Comment letter).
- Consistent with prior reporting, mass removal and remaining plume mass calculations will only be performed for chromium and perchlorate. Calculations for additional analytes would require a task budget amendment.
- Consistent with the previously approved approach to streamline the Semi-Annual Remedial Performance Memorandum, plume maps and updated plume mass estimates will only be included in the Annual Remedial Performance Report.
- Chloroform is the only VOC that will be evaluated and discussed in the remedial performance report text, figures, and plates. Data for other VOCs will be presented in data tables as an appendix.
- The scope does not include data evaluation or reporting efforts for data from the ongoing RI. The status of RI efforts will be acknowledged in the Semi-Annual Remedial Performance Memorandum and Annual Remedial Performance Report, but not analyzed or evaluated. This additional information will be detailed at length in the RI Report.
- The data compilation and analysis related to the environmental footprint will only include information for the period July 2018 through June 2019 associated with the groundwater monitoring program or operation of the GWETS. Other site activities (e.g. Phase 2 RI, treatability studies, etc.) will not be included in the environmental footprint.

Anticipated Schedule: Data evaluation and reporting efforts for the monitoring program will be implemented on an ongoing basis throughout 2019. The following NDEP deliverables will be prepared:

- Second Quarter 2019 (typically submitted to NDEP on April 30 each year): The Semi-Annual Remedial Performance Memorandum, consisting of a streamlined data transmittal and summary of remedial performance, covering data collected from July through December 2018.
- Fourth Quarter 2019 (typically submitted to NDEP on October 31 each year): The Annual Remedial Performance Report, covering data collected from July 2018 through June 2019.

Budget Information: Based on this scope of work, the estimated 2019 budget for this task is \$563,000. There are no subcontracted services for this task and no contingency has been added to the budget. It is anticipated that groundwater monitoring program data evaluation and

reporting will continue into 2020, with a new scope of work and budget estimate to be developed for this task in 2020.

<b>H05 – Data Evaluation and Reporting</b>		
2018 Approved Budget	Anticipated 2018 Budget Used by 12/31/2018	2019 Budget Requested
\$563,000	\$562,000	\$563,000

## **H07 – Monitoring Well Repairs**

Task Description: This scope of work includes efforts necessary to complete repairs of select monitoring wells owned by the Trust. In September 2016, well inspections were conducted on all NERT-owned wells in addition to wells owned by others that are sampled as part of the NERT groundwater monitoring program, including wells owned by Basic Remediation Company LLC (BRC), Olin/Stauffer/Syngenta/Montrose (OSSM), City of Henderson (COH), and American Pacific Corporation (AMPAC/Endeavour). As a result of the 2016 monitoring well inventory, each well was assigned a repair rating of priority 1, priority 2, or other (lower priority).

During 2018, a total of 60 monitoring well repairs were completed, and 57 monitoring wells were video logged for inspection and total depth confirmation. Each location was assessed prior to conducting repair activities to ensure the proper repair was being conducted per the current condition of the monitoring well. The well repairs completed in 2018 included:

- Removal and replacement of well box (24 locations)
- Removal and replacement of stove pipe well casing (4 locations)
- Conversion of stove pipe well to flush mounted well (2 locations)
- Addition of PVC to raise top of casing (2 locations)
- Installation of new stove pipe lids and locking mechanisms (13 locations)
- Re-tapping of well box lid and installation of new bolts (4 locations)
- Removal and replacement of monitoring well concrete apron (1 location)
- PVC trimmed to allow well cap to seal properly (1 location)
- Stuck pump removed from monitoring well (1 location)
- Abandon and replacement of monitoring well (1 location)
- Removal of foreign objects from bottom of monitoring well (7 locations)

Monitoring well repairs completed in 2018 focused primarily on priority 1 and 2 monitoring wells. After reviewing the remaining lower priority monitoring wells, 27 NERT-owned wells have been



identified for repair or further assessment in 2019. A downhole video inspection will be performed on three of the 27 wells to identify obstructions in the wells, remove if possible, and evaluate if well repairs are needed. Well repair activities for up to 27 wells will include repairing well boxes and casings, replacement of stove pipe lids and locking mechanisms, rethreading of well lid bolt eyelets and installation of new bolts, and adding sand around well casings to secure them. An additional 17 monitoring wells owned by other parties have been identified for repair or further assessment; however, repair of these non-NERT owned wells are not included in this scope of work.

This scope of work includes: 1) performing downhole video inspections of three monitoring wells to identify obstructions and possible repairs; 2) conducting monitoring well repairs on up to 27 NERT-owned wells identified as needing repair, and 3) preparation of a brief technical memorandum, for internal use by the Trust and for recordkeeping, summarizing monitoring well repairs performed in 2018 and 2019.

Comparison to 2018: The proposed 2018 scope of work was completed in 2018. This scope of work is for additional efforts anticipated in 2019 pertaining to completion of monitoring well repairs.

Assumptions:

- Downhole video inspections will be performed at up to three monitoring wells; these activities will include removal and reinstallation of existing pump, boreline equipment, and dedicated tubing from the well (if present), downhole video logging, verification of well depths and screened intervals, and attempted removal of any obstructions that may be identified. If needed repairs to these three wells are identified by video logging, \$68,000 is included in the budget for this task to perform repairs on these wells. However, since the necessary repairs cannot be determined at this time, if additional budget is needed to complete the repairs, an additional work authorization will be prepared for review and approval by the Trust.
- Stove pipe lids will be replaced at up to six monitoring wells.
- Stove pipe lid locking mechanisms will be repaired, new locks will be installed, and sand will be added to secure the well casing at up to two monitoring wells.
- Well boxes will be replaced at up to eight monitoring wells; these activities will include removal of the existing well box (by the drilling subcontractor), inspection of the PVC riser, replacement of the PVC riser if damaged, installation of a new well box, and constructing a new surface completion.
- Well boxes will have the bolt eyelets rethreaded and new bolts installed at up to three monitoring wells.
- Addition of sand around monitoring well casing to stabilize well casing will be installed at five monitoring wells.

- Ramboll understands the following well repairs are to be performed by Envirogen Technologies, Inc. (ETI) per their Operations and Maintenance (O&M) Agreement with the Trust. The following repairs will not be performed by Ramboll. Ramboll will provide a tabular summary to the Trust of the following information so the Trust can provide notification to ETI of the repairs needed:
  - New monitoring well locks (exterior and/or interior locks) are needed at 19 monitoring wells.
  - A new vault lock is needed at one monitoring well.
  - New locking well caps are needed at up to 17 monitoring wells.

**Anticipated Schedule:** Work on this task is anticipated to take place throughout 2019. Monitoring well repairs are anticipated to be performed in the second and third quarters, with preparation of the technical memorandum in the fourth quarter of 2019. No NDEP submittals are anticipated for this task.

**Budget Information:** Based on this scope of work, the estimated 2019 budget for this task is \$125,000, including \$68,000 for possible repairs which may be identified during monitoring well video inspections to be performed as part of this scope of work. The budget estimate includes up to \$65,500 for monitoring well video inspection and monitoring well repair subcontractors. No contingency has been added to the budget. This work is anticipated to be completed in 2019 with no task specific rollover into 2020.

<b>H07 – Monitoring Well Repairs</b>		
2018 Approved Budget	Anticipated 2018 Budget Used by 12/31/2018	2019 Budget Requested
\$195,000	\$126,000	\$125,000

## **H08 – Database Management, Maintenance, and Accessibility**

**Task Description:** Under this task, Ramboll will continue to maintain and update a cloud-based, internet-accessible master NERT project database to provide continuous access to project data for AECOM, Tetra Tech, the Trust, and other third parties. As part of this scope of work, Ramboll will provide information and direction to database users on how to access and query the database and respond to user questions about the database or connecting to and querying the database. At least twice per month, the database will be updated with newly available data.

In the 2019 scope, data from AECOM and Tetra Tech will continue to be reviewed and incorporated into the master NERT project database maintained in EQuIS. This effort began in third quarter 2016 following NDEP's approval of the Trust's Budget Amendment 2016-01 on August 3, 2017.

The 2019 scope also includes a review of AECOM generated data, reports, geospatial information, and other applicable files. The review will verify that AECOM generated data and geospatial information have been incorporated into the project database, AECOM generated reports are included in the online document repository, and other applicable files have been obtained from AECOM. This task also includes coordination with AECOM to obtain the necessary data and documents to cover any gaps found in the review.

The 2019 scope will also include further development of an internet-accessible database front-end portal to enhance accessibility of data by providing filtering and display tools and exporting of data. The first version of this "Data Explorer" was completed in 2016, which included capabilities to filter and display groundwater data in tables, display queried data on online maps, select layers for display, and display queried data on time-series plots. Enhancements were made to the Data Explorer in 2018 including presentation of soil data; flow and mass removal data; expanded mapping capability; and other user friendliness features. Continued development and maintenance of the Data Explorer will be performed in 2019 in collaboration with the Trust. This task includes a rollover budget of \$15,000 for sharing the Data Explorer with NDEP and USEPA. Ramboll will introduce the Data Explorer to NDEP and USEPA via an in-person demonstration.

The 2018 scope for this task included finalizing and implementing a written Data Management Plan. On March 29, 2018, the final Data Management Plan was distributed to the Trust, Foley & Lardner, Ramboll, Tetra Tech, and ETI. The 2019 scope includes review of, and performing updates to, the Data Management Plan.

The 2018 scope for this task included the development and implementation of an externally-available searchable database of NERT Site and applicable BMI Complex Party documents for use by the Trust and project consultants. It is anticipated that maintenance and additional development of the document database will occur throughout 2019.

The 2018 scope for this task included organizing documents for the NERT Site and other BMI Complex facilities and classifying and filing the documents into an established document repository for project staff use. As we have seen in prior years, the document classification, organization system and searchable document database helps to streamline document review-related work on other project tasks.

Comparison to 2018: No subtasks from 2018 have been removed. The following subtasks were included in the 2018 scope of work and are also included in the 2019 scope of work, with some modifications:

- Continued maintenance of an externally-available searchable database of NERT Site and BMI Complex Party documents for use by the Trust and project consultants (budget estimate reduced by \$5,000 from 2018); and
- Maintenance of the Data Management Plan including periodic data quality assurance conference calls with Tetra Tech and AECOM and integration of AECOM transducer data from the Downgradient Study Area in the NERT database;

The following subtask is added to the 2019 scope of work:

- Review of the completeness of AECOM data in the database and the completeness of AECOM reports and applicable files in the online document repository.

Assumptions:

- This scope of work does not include integration of historical data sets or data sets from other BMI complex facilities into the database, but these data sets may be presented on the Data Explorer if they are incorporated into the master database via other project tasks.
- For budgeting purposes, it is assumed that one Ramboll staff member will travel to Henderson once during 2019 for the in-person meeting with NDEP and USEPA described above.

Anticipated Schedule: The work on this task will be implemented on an ongoing basis throughout 2019. No NDEP submittals are anticipated for this task.

Budget Information: Based on this scope of work, the estimated 2019 budget for this task is \$285,000. There are no subcontracted services for this task and no contingency has been added to the budget. It is anticipated that activities on this task will continue into 2020, with a new scope of work and budget estimate to be developed for this task in 2020.

<b>H08 – Database Management, Maintenance, and Accessibility</b>				
2018 Approved Budget	Anticipated 2018 Budget Used by 12/31/2018	Anticipated 2018 Rollover Budget	2019 Budget Request for Continuing Scope	2019 Budget Requested
\$262,000	\$247,000	\$15,000	\$270,000	\$285,000

## **J02 – Permit Compliance and Reporting**

Task Description: Ramboll will provide continued permitting and compliance assistance to the Trust. Ramboll's permitting and compliance assistance under this task is associated with the following permits:

- 1) NPDES Permit #NV0023060 (permit for discharge of treated effluent to the Las Vegas Wash);
- 2) UIC Permit #UNEV94218 (permit for injection of Lake Mead water into two injection/recharge trenches); and
- 3) Water Appropriation Permits #s 50801, 59681, 59682, 65199E, 67701E, 68143E, 68319E, 69589E, 79866E, 79867E, 79868E, 86268E, 86355E and 87352E (permits for extraction of groundwater for pollution control).

Ramboll's permitting and compliance assistance will include the following tasks: 1) providing technical assistance to the Trust as required for maintaining compliance with each permit; 2) preparation and submittal of compliance reports for each permit as well as the Northshore Road perchlorate data; 3) tracking laboratory analytical data and preparation of the weekly NPDES tracker; 4) correspondence with NDEP and Nevada Division of Water Resources (NDWR) personnel, including reporting requirements due to permit excursions, if any; and 5) participation in agency compliance inspections pertaining to the permits listed above.

Comparison to 2018: The scope of work is generally the same as 2018, but we anticipate the level of effort for this task to be reduced due to efficiencies gained while completing this effort over the last few years.

Assumptions:

- This task does not include permitting and compliance assistance for the NPDES permit #NV0024228 for SNWA weir dewatering treatment (see Task L09), the Groundwater Discharge Permit #NEV2001515, the Dam Permit #J-665, the Clark County Department of Air Quality Minor Source Permit #17249, or other permits not specifically listed above.
- Annual permit fees are anticipated to be paid directly by the Trust and are not included in the budget for this task.
- For budgeting purposes, it is assumed that one Ramboll staff member will travel to the Site once during 2019 for this task.

Anticipated Schedule: The work on this task will be implemented on an ongoing basis throughout 2019, with the following compliance deliverables anticipated:

- Quarterly Reports and DMRs (submitted electronically via NetDMR) for NPDES Permit #NV0023060, submitted to NDEP-BWPC;
- Semi-Annual Reports for the UIC Permit #UNEV94218, submitted to NDEP-BWPC;
- Combined Quarterly Pumpage Reports for Water Appropriation Permits, submitted to NDWR;
- Monthly Northshore Rd Perchlorate Mass Tracking Deliverable, submitted to NDEP-BISC; and
- Weekly NPDES Trackers for NPDES Permit #NV0023060, submitted to the Trust.

Budget Information: Based on this scope of work, the estimated 2019 budget for this task is \$125,000. The estimated budget breaks down as follows: 1) NPDES Permit #NV0023060 tasks: \$58,000; 2) UIC Permit tasks: \$20,000; 3) Water Appropriation Permits tasks: \$22,000; 4) Northshore Road perchlorate data tasks: \$9,000; and 5) General permitting and compliance correspondence with the Trust, Tetra Tech, and ETI: \$16,000. There are no subcontracted services for this task and no contingency has been added to the budget. It is anticipated that

activities on this task will continue into 2020, with a new scope of work and budget estimate to be developed for this task in 2020.

<b>J02 – Permit Compliance and Reporting</b>		
2018 Approved Budget	Anticipated 2018 Budget Used by 12/31/2018	2019 Budget Requested
\$143,000	\$113,000	\$125,000

### **J03 – GWETS Data Management and Evaluation**

Task Description: Ramboll will continue to provide data management and evaluation services for the GWETS monitoring program for the NERT Site. The GWETS monitoring program consists of about 4,000 analyses per year performed at an off-site state-certified laboratory. Samples are collected and analyzed throughout the year during weekly, bi-weekly, monthly, quarterly, and annual sampling events. Field measurements, including flow rates within the GWETS and extraction rates of individual wells, are also collected and compiled. The data gathered from these sampling events support 1) the compliance programs related to the various permits covering operation of the GWETS; 2) performance evaluations of the GWETS and the remediation program such as mass removal estimating and capture zone analyses; and 3) the Semi-Annual Remedial Performance Memorandum and the Annual Remedial Performance Report.

This effort includes 1) downloading and tracking data as it is generated (both field measurements and analytical data) to assess completeness; 2) coordination with laboratory and field personnel on data generation and management issues including missing data; 3) input of data into the database and maintaining data in an organized, transparent, and readily accessible manner; 4) performing QA/QC on the database; 5) conducting high-level reviews of GWETS performance data; 6) contacting laboratory and field personnel regarding anomalous data and development of corrective actions; 7) contacting field personnel regarding GWETS operational issues; 8) running queries on the NERT database to prepare data summaries and perform data evaluations, including chromium and perchlorate mass removal calculations and capture zone evaluations; and 9) corresponding with the Trust, Tetra Tech, ETI, and NDEP as necessary on GWETS data management matters and other items relating to GWETS operation.

Comparison to 2018: The scope of work is generally the same as 2018, but we anticipate the level of effort for this task to be reduced due to efficiencies gained while completing this effort over the last few years.

#### Assumptions:

- This scope of work does not include data quality review and verification of GWETS data provided by ETI.

- ETI will continue to perform all GWETS monitoring program sampling and measurement activities under its existing contract with the Trust.
- Reporting of the GWETS data evaluations performed under this task will be incorporated into the Semi-Annual Remedial Performance Memorandum and Annual Remedial Performance Report, which are included under Task H05.
- No travel is budgeted for this task.

**Anticipated Schedule:** Samples are collected and analyzed throughout the year during weekly, bi-weekly, monthly, quarterly, and annual sampling events. The work on this task will be implemented on an ongoing basis throughout 2019. No NDEP submittals are anticipated for this task.

**Budget Information:** Based on this scope of work, the estimated 2019 budget for this task is \$95,000. There are no subcontracted services for this task and no contingency has been added to the budget. It is anticipated that GWETS data evaluation and management will continue into 2020, with a new scope of work and budget estimate to be developed for this task in 2020.

<b>J03 – GWETS Data Management and Evaluation</b>		
2018 Approved Budget	Anticipated 2018 Budget Used by 12/31/2018	2019 Budget Requested
\$118,000	\$95,000	\$95,000

## **L01 – Community Involvement**

**Task Description:** The *Community Involvement Plan (CIP)* for the NERT Site was developed to facilitate communication between the community surrounding the NERT RI Study Area with NDEP and the Trust and to encourage community involvement in Site activities. The CIP addresses the relationship with the community, provides a background of the community, presents the Trust's community involvement program, and provides a listing of resources available. As established in the CIP, the Trust will continue to provide routine updates to the public through mailings and public meetings. The current version of the CIP is Revision 2 dated April 2017.

The 2019 scope of work includes 1) ongoing maintenance of the Trust's online document repository website (previously established at <http://www.NERT-Trust.com/>); 2) researching questions generated during community engagement activities, as well as assisting NDEP with community questions, as requested; 3) as required by the CIP, preparation of an updated project Fact Sheet; 4) updating the CIP mailing list to incorporate the latest community residence data and performing a community mailing (to include English language versions of the updated cover letter, Fact Sheet, and site map), as required by the CIP; and 5) translation of the community mailing documents into Spanish and Braille (the Spanish language documents will be made available on the Trust's online document repository website).

Comparison to 2018: This scope of work is similar to the 2018 scope of work for this task, with the following subtask removed in 2019:

- Reviewing and updating (in collaboration with NDEP) the Site Status Summary for the Site.

Assumptions:

- The scope of work includes a minimal level of effort for responding to NDEP comments on the updated mailing documents, including the Fact Sheet.
- There will only be one mailing in 2019, which will include a cover letter, a Fact Sheet, and a site map. The mailing will be sent to no more than 30,000 addresses (increased from 2018).
- No updates to the FAQ will be needed in 2019.

Anticipated Schedule: Implementation of the community involvement activities are anticipated to occur throughout 2019 with the mailing documents updated and prepared during 3<sup>rd</sup> quarter and the mailing to occur during 4<sup>th</sup> quarter. No deliverables to NDEP on this task are anticipated in 2019.

Budget Information: Based on this scope of work, the estimated 2019 budget for this task is \$79,000. There are no subcontracted services for this task and no contingency has been added to the budget. It is anticipated that community involvement activities will continue into 2020, with a new scope of work and budget estimate to be developed for this task in 2020.

<b>L01 – Community Involvement</b>		
2018 Approved Budget	Anticipated 2018 Budget Used by 12/31/2018	2019 Budget Requested
\$82,000	\$82,000	\$79,000

## **M06 – Human Health and Ecological Risk Assessments**

Task Description: This scope of work includes efforts that are anticipated in 2019 as part of the RI for the preparation of the Baseline Health Risk Assessment (BHRA) and the refined Screening Level Ecological Risk Assessment (refined SLERA) for the Operations Area<sup>1</sup> at the NERT Site (in OU-1), as well as for human health and ecological risk assessment activities for OU-2, and OU-3. As shown on Figures 1 and 2, the BHRAs and ecological risk assessments (ERAs) for OU-1, OU-2, and OU-3 will be conducted using the data collected during the Phase 1, 2, and 3 RIs based on the methodologies described in each investigation's corresponding work plans. The risk results and conclusions derived from the BHRAs and ERAs will be considered in the feasibility studies

<sup>1</sup> In previous Scopes of Work, the Operations Area was referred to as the Facility Area. The Operations Area includes all of OU-1 except Parcels C, D, E, F, G, and H.



and ROD development for each of the three OUs. To better track project costs and budget status, Ramboll has divided this work into two subtasks for the BHRA and ERA (M06A and M06B), respectively, as described below.

### **M06A – Human Health Risk Assessments**

Task Description: In 2018, the Soil Gas/Groundwater BHRA Work Plan for OU-1 and OU-2 was submitted to NDEP on August 3, 2018, and NDEP comments were received on October 23, 2018. The revised Soil Gas/Groundwater BHRA Work Plan for OU-1 and OU-2 was submitted to NDEP on December 19, 2018 and is currently under NDEP review. This scope of work for 2019 includes efforts that are currently in progress as part of the RI for the preparation of the Soil and Soil Gas/Groundwater BHRAs for the Operations Area (in OU-1), the Soil Gas/Groundwater BHRA for OU-2, and the BHRA Work Plan for OU-3. New efforts for the implementation of the BHRA for OU-3 and the HRA for Parcel E are also included in this scope of work. The specific tasks and budget identified below are for work that is anticipated to be conducted in 2019.

Comparison to 2018: This scope of work is for continued efforts from 2018 (for which there is \$146,000 rollover budget) and new efforts anticipated in 2019 pertaining to completion of the BHRAs in the RI Study Area. The 2019 scope of work includes:

- Prepare and submit the Soil BHRA Report for the Operations Area in OU-1 (\$20,000 rollover + \$80,000);
- Prepare and submit the Soil Gas/Groundwater BHRA Report for the Operations Area in OU-1 (\$53,500 rollover + \$100,000);
- Prepare and submit the Soil Gas/Groundwater BHRA Report for OU-2 (\$43,000 rollover + \$100,000);
- Prepare and submit the BHRA Work Plan for OU-3 (\$29,500 rollover + \$50,000);
- Begin implementation of the BHRA for OU-3 (\$100,000); and
- Prepare and submit the HRA Report for Parcel E (\$70,000).

### **Operable Unit 1**

This scope of work includes continued efforts from 2018 pertaining to the completion of the Soil and Soil Gas/Groundwater BHRAs for the Operations Area at the NERT Site (OU-1) and new effort for the completion of the Parcel E HRA Report. The 2019 scope of work includes: 1) preparing and submitting the Soil BHRA Report for the Operations Area; 2) preparing and submitting the Soil Gas/Groundwater BHRA Report for the Operations Area; and 3) preparing and submitting the Parcel E HRA Report.

### **Assumptions:**

- The revised Soil Gas/Groundwater BHRA Work Plan for OU-1 and OU-2 was submitted to NDEP on December 19, 2018. It is anticipated that this deliverable will be approved by NDEP during the first quarter of 2019; an errata to address comments, will be prepared, if

needed (i.e. the Soil Gas/Groundwater BHRA Work Plan for OU-1 and OU-2 will not be revised again and resubmitted).

- Additional soil gas data for OU-1 as proposed in the Phase 2 RI Modification No. 11 will be available prior to the Soil Gas/Groundwater BHRA evaluation for the Operations Area in OU-1.
- The Soil BHRA Report and the Soil Gas/Groundwater BHRA Report for the Operations Area in OU-1 will be submitted separately.
- The budget for corresponding with NDEP and responding to NDEP's comments on the Soil BHRA Report and the Soil Gas/Groundwater BHRA Report for the Operations Area in OU-1 assumes a moderate level of effort (i.e., no significant additional data generation/analysis, graphics, meetings, or other deliverables beyond a Response to Comment letter).
- No HRA work plan is required for Parcel E. The Parcel E HRA will be conducted following the same methodology as the HRAs for Parcels, C, D, F, G, and H.
- The Parcel E HRA Report will be submitted separately from the BHRA reports for the Operations Area in OU-1, since this parcel is not contiguous with the Operations Area and will address human health risks associated with multiple media in the same report. Ultimately both the Operations Area and Parcel E will be evaluated in the FS.
- The budget for corresponding with NDEP and responding to NDEP's comments on the Parcel E HRA Report assumes a moderate level of effort (i.e., no significant additional data generation/analysis, graphics, meetings, or other deliverables beyond a Response to Comment letter).

### **Operable Unit 2**

This scope of work includes continued efforts from 2018 pertaining to the completion of the Soil Gas/Groundwater BHRA for the Off-Site Study Area of OU-2. The 2019 scope of work includes preparing and submitting the Soil Gas/Groundwater BHRA Report for OU-2.

#### **Assumptions:**

- The budget for corresponding with NDEP and responding to NDEP's comments on the Soil Gas/Groundwater BHRA Work Plan for OU-1 and OU-2 assumes a moderate level of effort (i.e., no significant additional data generation/analysis, graphics, meetings, or other deliverables beyond a Response to Comment letter) and assumes that NDEP will approve the revised work plan no later than the first quarter of 2019.
- No soil BHRA is needed for the Off-Site Study Area of OU-2.
- Additional soil gas data for OU-2 as proposed in the Phase 2 RI Modification No. 11 will be available prior to the Soil Gas/Groundwater BHRA evaluation for OU-2.
- The budget for corresponding with NDEP and responding to NDEP's comments on the Soil Gas/Groundwater BHRA Report for OU-2 assumes a moderate level of effort (i.e., no

significant additional data generation/analysis, graphics, meetings, or other deliverables beyond a Response to Comment letter).

### **Operable Unit 3**

This scope of work includes continued efforts from 2018 pertaining to the completion of the BHRA Work Plan for OU-3 and new effort pertaining to the implementation of the BHRA for OU-3. The 2019 scope of work includes: 1) preparing and submitting the BHRA Work Plan for OU-3; and 2) initiating implementation of the BHRA for OU-3.

#### **Assumptions:**

- The budget for corresponding with NDEP and responding to NDEP's comments on the BHRA Work Plan for OU-3 assumes a moderate level of effort (i.e., no significant additional data generation/analysis, graphics, meetings, or other deliverables beyond a Response to Comment letter).
- Additional bank soil, surface water, and sediment data for OU-3 as proposed in the OU-3 BERA Work Plan and additional soil gas and groundwater data for OU-3 that will be proposed in a forthcoming Phase 3 RI Modification will be available prior to the BHRA evaluation for OU-3.
- The BHRA implementation for OU-3 will primarily occur in 2019; the report will be submitted in 2020. The budget estimate for this task does not include reporting efforts anticipated to take place in 2020.

**Anticipated Schedule:** The work on this task will be implemented on an ongoing basis throughout 2019, with the following NDEP deliverables anticipated:

- Second Quarter 2019: Soil BHRA Report for the Operations Area in OU-1;
- Second Quarter 2019: BHRA Work Plan for OU-3;
- Third Quarter 2019: Soil Gas/Groundwater BHRA Report for the Operations Area in OU-1;
- Third Quarter 2019: Soil Gas/Groundwater BHRA Report for OU-2; and
- Fourth Quarter 2019: Parcel E HRA Report.

**Budget Information:** The estimated budget for this task is based on the effort required for the tasks identified above, which are anticipated to be performed in 2019; however, the actual scope of work to be completed in 2019 will depend on the overall project schedule and the extent and timing of NDEP review comments. Based on this scope of work, the estimated 2019 budget for this task is \$646,000, including \$146,000 in rollover budget from 2018. There are no subcontracted services for this task and no contingency has been added to the budget. It is anticipated that work on this task will continue into 2020, with a new scope of work and budget estimate to be developed for this task in 2020.

<b>M06A – Human Health Risk Assessments</b>				
2018 Approved Budget	Anticipated 2018 Budget Used by 12/31/2018	Anticipated 2018 Rollover Budget	2019 Budget Requested for Expanded Scope	Total 2019 Budget Requested
\$590,000	\$444,000	\$146,000	\$500,000	\$646,000

## **M06B – Ecological Risk Assessments**

Task Description: This scope of work includes the following subtasks:

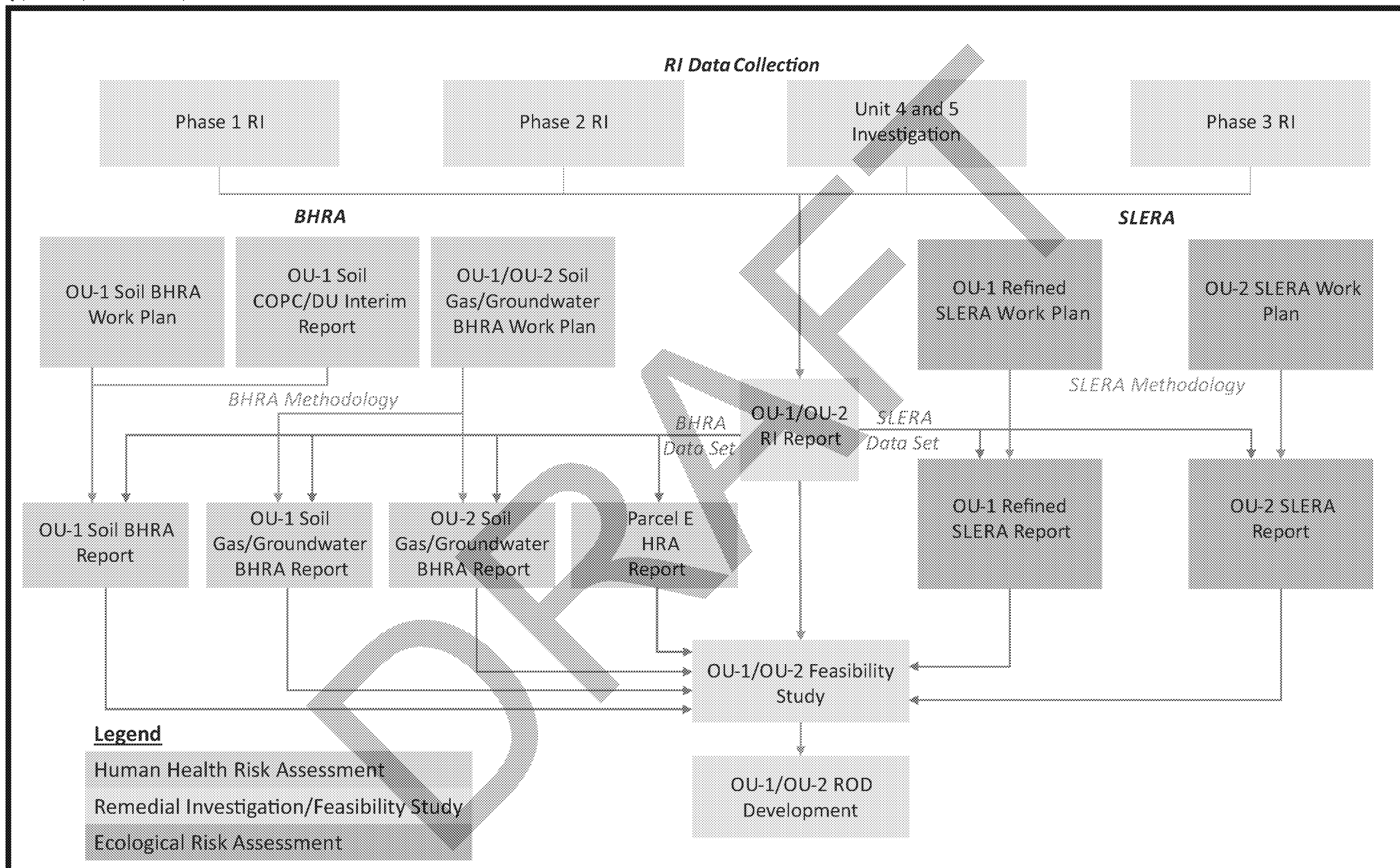
- Rollover tasks not yet completed from 2018, including addressing NDEP comments on and submittal of a revised OU-3 BERA Work Plan (including Field Sampling Plan), completion of the OU-1 Refined SLERA, completion of the OU-2 SLERA, and performing field investigation planning and preparation;
- New tasks for OU-1 and OU-2 not included in previous scope and budget efforts, including responding to NDEP comments on the OU-1 Refined SLERA and the OU-2 SLERA reports;
- Implementation of the OU-3 field investigation in accordance with the OU-3 Baseline Ecological Risk Assessment (BERA) Work Plan and Field Sampling Plan (FSP); and
- Conducting the OU-3 BERA, in accordance with the OU-3 BERA Work Plan.

Rollover and Continuation of 2018 Subtasks: This task includes a rollover budget of \$69,000 to complete the following remaining subtasks from the 2018 scope of work:

- Addressing NDEP comments on and submittal of a revised OU-3 BERA Work Plan (including Field Sampling Plan);
- Performing the OU-1 Refined SLERA;
- Performing the OU-2 SLERA; and
- Performing OU-3 ecological field work preparation, including a site visit. The fieldwork preparation includes efforts to obtain access agreements for the OU-3 implementation.

New Tasks for 2019: The 2019 scope of work includes the following new subtasks:

- Responding to NDEP comments on the OU-1 Refined SLERA report (\$18,000);
- Responding to NDEP comments on the OU-2 SLERA report (\$12,000);
- Implementation of the OU-3 Field Sampling Program (\$882,000):
  - The OU-3 field effort includes performing a comprehensive field investigation within OU-3, the data from which will be used to conduct the Baseline Ecological Risk Assessment (BERA) and the Baseline Human Health Risk Assessment (BHRA) for OU-3. The details of the field sampling approach proposed for OU-3 is provided in the *Field Sampling Plan for Operable Unit 3, Revision 0* (OU-3 FSP; Appendix A of the OU-3 BERA Work Plan), dated October 29, 2018. The scope of work and budget estimate (see detailed cost estimate in Attachment A) for the field effort is based on the



RAMBOLL

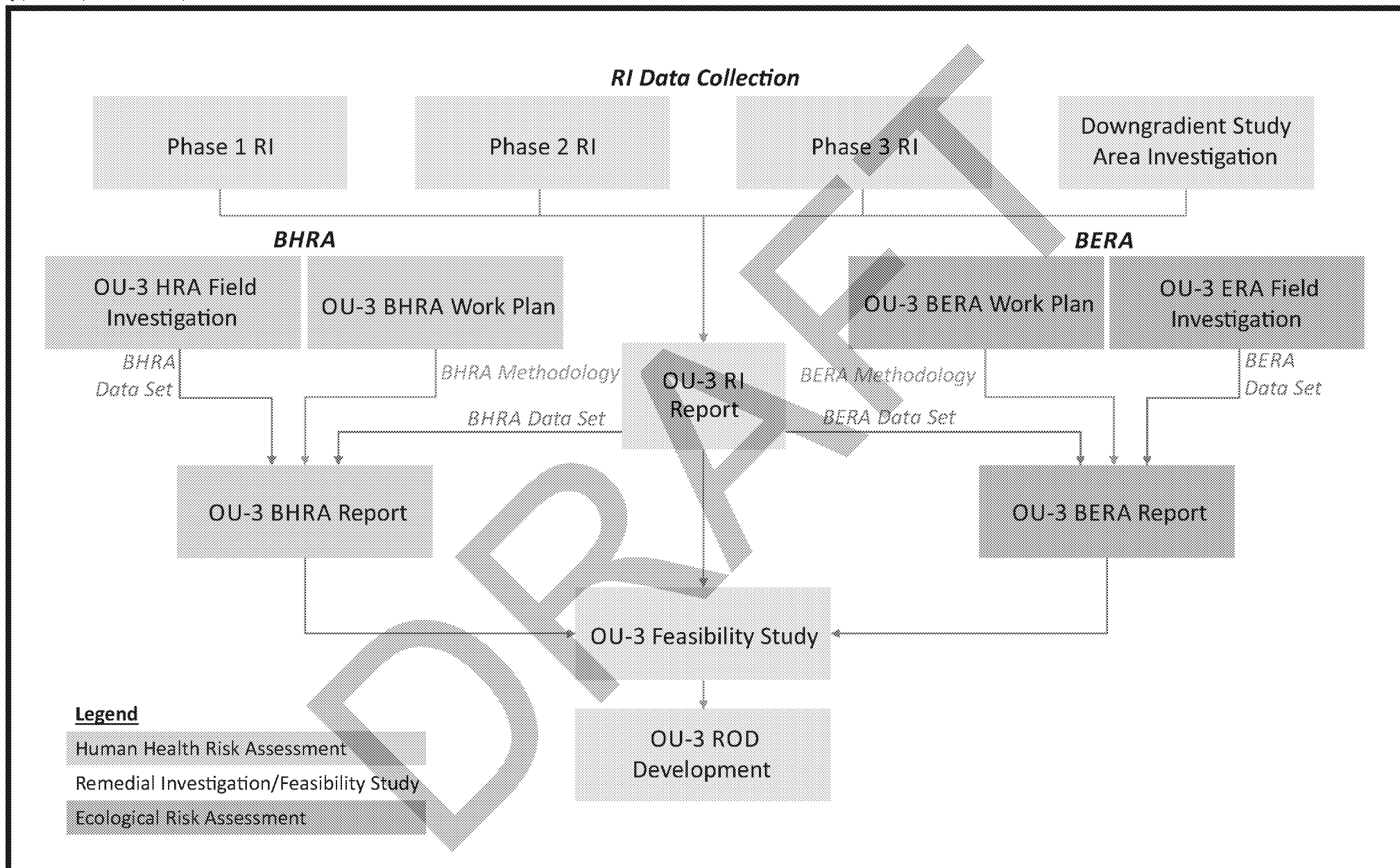
# **OU-1/OU-2 Risk Assessment Flowchart** Nevada Environmental Response Trust Site Henderson, Nevada

**FIGURE 1**

DRAFTED BY: RS

DATE: 12-13-18

1690006608-017



**RAMBOLL**

DRAFTED BY: RS

DATE: 1-26-18

**OU-3 Risk Assessment Flowchart**  
Nevada Environmental Response Trust Site  
Henderson, Nevada

**FIGURE  
2**

1690006608-017

approach described in this OU-3 FSP. The OU-3 FSP has not yet been approved by NDEP, as such, the scope of work and cost estimate may change if the NDEP review of the FSP results in changes to the field program.

- The objectives of the field sampling proposed within OU-3 are to 1) guide data collection activities in support of the risk assessments; and 2) ensure a consistent and appropriate methodology for the collection and analysis of environmental samples collected in OU-3. The OU-3 FSP describes the methods that will be used to collect and analyze representative surface water, sediment, sediment porewater, soil, and biota from OU-3, as well as suitable off-Site reference areas, as appropriate. The data collected from the reference areas will provide a basis of comparison for the data collected from within OU-3. This task includes:
  - Organization and mobilization of equipment, instruments, and field staff for the field effort;
  - Setting up staging areas along the Las Vegas Wash for the field sampling (including access agreements);
  - The collection of abiotic media including soil, surface water, sediment, and sediment pore water for chemical analysis (including quality control samples);
  - The collection of biotic media including benthic invertebrates for community analysis, benthic invertebrates and fish for tissue analysis (including quality control samples);
  - Demobilization of equipment, instruments, and field staff;
  - Laboratory analysis costs for abiotic and biotic media, with key constituents as follows: perchlorate, chlorate, total chromium, and hexavalent chromium. Additional analyses will be conducted to aid in the understanding of bioavailability (total and dissolved organic carbon and hardness);
  - Lab coordination and data management into the EQuIS database; and
  - Data validation and data validation summary report (DVSR) submittal to NDEP.
- Completion of the OU-3 BERA (\$771,000):
  - The OU-3 BERA will provide an evaluation of potential risks to ecological receptors within OU-3 posed by chemicals that have migrated from the NERT Site (OU-1) to OU-3. The approach for the OU-3 BERA is described in the *Baseline Ecological Risk Assessment Work Plan for Operable Unit 3, Revision 0* (OU-3 BERA Work Plan), dated October 29, 2018. The scope of work and budget estimate (see detailed cost estimate in Attachment A) for the completion of the OU-3 BERA is based on the approach described in this OU-3 BERA Work Plan. The OU-3 BERA Work Plan has not yet been approved by NDEP, as such, the scope of work and cost estimate may change if the NDEP review of the OU-3 BERA Work Plan results in changes to the BERA approach.
  - A tiered approach will be used in the OU-3 BERA that includes “screening” and “refined” scenarios to evaluate the range of potential risks, as described in the OU-3

BERA Work Plan. A food web model will be used to evaluate potential ecological risk via bioaccumulation pathways to representative mammalian and avian receptors that may feed within OU-3. The OU-3 BERA report will be prepared and will describe the BERA approach and the results of the screening and refined assessment, including the results from the food web modeling. The results of the BERA will indicate whether there are potential risks to wildlife from exposure to media in OU-3 from chemicals that have migrated from the NERT Site to OU-3. More specifically, the OU-3 BERA report will include the following:

- The OU-3 BERA report will include a detailed introduction, description of OU-3 location, OU-3 site description and history, problem formulation, and development of a conceptual site model (CSM) based on the OU-3 field investigation results;
  - Ecological Screening Values and Toxicity Reference Values will be summarized and documented for the key COPECs identified in the October 2018 OU-3 BERA Work Plan;
  - An aquatic ERA (benthic invertebrates, fish, and amphibians) and a terrestrial ERA (direct contact terrestrial plants, soil inverts, reptiles) will be conducted;
  - A food web model for aquatic-oriented and terrestrial mammal populations and bird populations specific to the OU-3 BERA will be developed and implemented; and
  - The BERA will include a risk characterization for all assessment endpoints (AEs), a combined risk summary, and a detailed executive summary for the OU-3 BERA.
- The OU-3 BERA report will include a stand-alone appendix that provides the OU-3 field investigation results. This appendix will include the following:
- A summary of the OU-3 investigation approach, sample locations, and samples collected;
  - Compilation of field data sheets, development of relevant photo logs, and tabulation of field data summaries (report text and multiple supporting appendices);
  - Database management for OU-3 investigation results (which is separate from database management efforts for the OU-3 BERA);
  - Summary of analytical results by medium (report text and data summary tables/figures);
  - Compilation of analytical results laboratory reports and data validation reports;
  - Analysis of OU-3 analytical results vs other sources and reference conditions;
  - Development of the OU-3 investigation results summary for the BERA report, including an OU-3 FSP executive summary;



Assumptions:

- The scope of work for the field effort and completion of the BERA is based on the OU-3 BERA Work Plan (including the OU-3 FSP) dated October 29, 2018 and submitted to NDEP in early November 2018. The OU-3 BERA Work Plan and FSP have not yet been approved by NDEP, as such, the scope of work and cost estimates for these efforts may change if the NDEP review of the OU-3 BERA Work Plan and FSP results in changes to the field program or the BERA approach.
- The budget estimates for corresponding with NDEP and responding to NDEP's comments on the OU-3 BERA Work Plan, OU-3 FSP, OU-1 Refined SLERA Report, OU-2 SLERA Report, and the OU-3 BERA Report each assume a moderate level of effort (i.e., no significant additional data generation/analysis, graphics, meetings, or other deliverables beyond a Response to Comment letter).
- The budget for conducting the field sampling detailed in the OU-3 FSP assumes that there will be no significant delays in the time proposed for the sampling to be completed. This includes issues such as weather delays and changes in property access to the Las Vegas Wash.
- The budget assumes sample collection can be conducted via wadeable waters or through the use of small boats, such as kayaks.
- The level of effort for field time is estimated as follows:
  - Surface water, sediment, and sediment pore water sampling effort is estimated to take 10 days with 2 teams of 2 staff. During this effort, passive diffusion samplers will be deployed for retrieval 28 days following deployment;
  - Fish and benthic community sampling is estimated to take 10 days with 2 teams of 2 staff; during this effort, artificial substrate samplers will be deployed for retrieval 28 days following deployment;
  - Pore water passive diffusion sampler retrieval and artificial substrate samplers will be retrieved during a single field effort that is estimated to take 10 days to retrieve samples and to process them in the field to the extent needed for shipment to the laboratories, with 2 teams of 2 staff; and
  - Soil collection is estimated to take place during a 3-day field effort with 1 team of 3 staff.
- Data validation costs assume 90% of data validated to Stage 2B and 10% validated to Stage 4 with one DVSR submittal to NDEP.
- The costs for the field investigation provided herein do not include reporting of the field data. Those costs are included with the implementation of the OU-3 BERA.
- The OU-3 BERA costs include database management for implementation of the BERA, which is separate from the dataset management costs identified for the stand-alone appendix for the OU-3 field investigation results.

- For budgeting purposes, it is assumed that up to four Ramboll staff will participate in up to four two-hour WebEx meetings with the Trust to discuss OU-3 BERA preliminary findings and review draft report materials.
- For budgeting purposes, it is assumed that up to three Ramboll staff will attend one in-person meeting with NDEP and the Trust in Henderson to discuss investigation results and the OU-3 BERA approach.
- The scope of work does not include responding to NDEP comments and preparing revised deliverables for the OU-3 BERA report and associated field investigation results appendix.

**Anticipated Schedule:** The work on this task will be implemented on an ongoing basis throughout 2019 and continuing into 2020, with the following NDEP deliverables anticipated in 2019:

- Third Quarter 2019: OU-1 Refined SLERA Report
- Third Quarter 2019: OU-2 SLERA Report

**Budget Information:** The estimated budget for this task (M06B) is based on the effort required for subtasks in progress from 2018 and the additional tasks identified above. Based on this scope of work, the estimated 2019 budget for this task is \$1,752,000 (including a rollover budget of \$69,000). There are subcontracted services for this task and a limited contingency (5%) has been added to the budget to cover possible additional field investigation expenses or laboratory subcontractor costs. It is anticipated that the ecological risk evaluation for OU-3 will continue into 2020, when the OU-3 BERA report is due to NDEP, with a rollover scope of work and budget estimate to be developed for this task in 2020.

<b>M06B – Ecological Risk Assessments</b>				
2018 Approved Budget	Anticipated 2018 Budget Used by 12/31/2018	Anticipated 2018 Rollover Budget	2019 Budget Requested for Expanded Scope	Total 2019 Budget Requested
\$244,000	\$175,000	\$69,000	\$1,683,000	\$1,752,000

## **M08 – RI Data Evaluation and Reporting**

**Task Description:** The scope of work for this task is a continuation of work begun in 2016 and continued in 2017 and 2018. The scope developed at that time was focused on the data collected during the RI Phase 2 Field Investigation task. The RI Phase 2 work was intended to resolve data gaps identified in the *Remedial Investigation Data Evaluation Technical Memorandum* prepared by Ramboll Environ dated May 2, 2016 (RI Tech Memo) and was planned to be incorporated into a future RI report. Since 2015, the NERT RI Study Area was expanded to include the Eastside Study Area (inclusive of the Eastside and Northeast Subareas) and the Downgradient Study Area. As part of the RI/FS Work Plan Addendum for the Phase 3 Remedial Investigation in the Eastside Study Area, the Trust proposed to organize the expanded NERT RI

Study Area into three Operable Units (OUs) to allow for consistency of the Remedial Action Objectives (RAOs) within each OU. At this time, we anticipate there will be preparation of two RI Reports. The OU-1/OU-2 RI Report is scheduled to be submitted in the first half of 2019, and the OU-3 RI Report is scheduled to be submitted in June 2020 although this schedule is subject to change at the discretion of the Trust. The scope of work for this task includes evaluation of data from all OUs; however, efforts in 2019 are anticipated to focus primarily on the preparation of the OU-1/OU-2 RI Report followed by evaluation of data from OU-3. This task will continue into 2020 and will focus primarily on the preparation of the OU-3 RI Report.

The 2018 scope of work for the RI data evaluation and reporting task included preparation of tables and figures for use in the forthcoming RI reports, as well as other concurrent efforts being implemented by the Trust such as GWETS evaluations and groundwater modeling efforts. The scope of work included activities such as 1) analysis of slug testing data, 2) preparation of data summary tables and preliminary data displays, 3) preparation of preliminary subsurface cross-sections and updating existing cross-sections with the RI Phase 2 results, and 4) preparation of the OU-1/OU-2 RI Report. This task included an evaluation of the nature and extent of COPC impacts to groundwater in the Middle WBZ, both from Site-related COPCs and trespassing chemicals. Existing and new information on aquifer properties is being compiled, including estimates of groundwater gradient, flow velocities, and an evaluation of vertical head differences at well cluster locations.

The proposed 2019 scope of work includes the continuation and expansion of efforts which began in 2018, as well as initiating efforts to evaluate data from OU-3 and begin preparing the OU-3 RI report. The 2019 scope of work includes additional effort (i.e. effort that was not assumed when the 2018 task budget was prepared) anticipated for RI data evaluation and reporting related to the expansion of the Phase 2 and Phase 3 RI field investigations, as described in 15 Phase 2 RI modification documents and 5 Phase 3 RI modification documents. These modifications to the RI resulted in an expansion of the investigation efforts, including drilling of approximately 35 soil borings; installation and development of 38 monitoring wells; installation of approximately 60 soil gas probes; collection, laboratory analysis, and validation of more than 450 soil, groundwater, surface water, and soil gas samples, performing NMR logging at more than 130 wells, and conducting hydraulic testing at more than 30 wells, as follows:

- RI Phase 2 Modification No. 1, dated April 26, 2017, proposed installing four additional on-site groundwater monitoring wells in the area west of the GW-11 pond. The purpose of the additional wells was to provide information needed to characterize the presence of VOCs and other Site related chemicals in groundwater in this area of the Site. This modification was approved by NDEP on May 1, 2017.
- RI Phase 2 Modification No. 2, dated May 1, 2017, proposed extending the total depth drilled for borings PCDB-1, PCDB-2, and PCDB-3 located in the Off-Site NERT RI Study Area an additional 60 feet to a total depth of 150 feet below ground surface based on the discovery of perchlorate in the Upper Muddy Creek formation near the Seep Well Field.

These three borings are located upgradient (south) of the Seep Well Field. This modification was approved by NDEP on May 5, 2017.

- RI Phase 2 Modification No. 3, dated June 7, 2017, proposed additional surface water sampling for perchlorate at locations within Las Vegas Wash to improve the understanding of perchlorate mass loading. This modification was approved by NDEP on June 9, 2017.
- RI Phase 2 Modification No. 4, dated June 7, 2017, proposed deepening the pilot borings from 120 feet to 150 feet below ground surface for monitoring wells M-194 through M-199 to better delineate the vertical extent of perchlorate and other chemicals of potential concern (COPCs) in the Upper Muddy Creek formation in the Leach Plant area. This modification was approved by NDEP on June 8, 2017.
- RI Phase 2 Modification No. 5, dated June 22, 2017, recommended adjustments to the well screen intervals of planned monitoring wells M-200, M-230, M-235 through M-238, and an adjustment to the location of one planned well M-234 based on lithology and soil sample concentrations encountered during drilling of pilot borings. This modification was approved by NDEP on June 26, 2017.
- RI Phase 2 Modification No. 6, dated July 17, 2017, presented the Soil Background Study Work Plan. The purpose of this proposed study was to provide a more representative data set for metals and radionuclides for comparison to the results from the RI as well as previous and future investigations. This modification was approved by NDEP on October 16, 2017.
- RI Phase 2 Modification No. 7, dated July 26, 2017, proposed installing one shallow monitoring well (CTMW-07S) and one deep monitoring well (CTMW-07D) adjacent to the existing In-Situ Chromium Treatability Study wells. This modification was approved by NDEP on Jul 27, 2017.
- RI Phase 2 Modification No. 8, dated August 24, 2017, recommended adjusting the well screen intervals of planned monitoring wells M-224, M-227, and M-228 based on conditions encountered during drilling and preliminary soil concentration data. This modification was approved by NDEP on August 25, 2017.
- RI Phase 2 Modification No. 9, dated November 1, 2017, recommended obtaining additional data on current concentrations of volatile organic compounds (VOCs) in the vicinity of the Interceptor Well Field (IWF), by collecting groundwater samples from 17 IWF monitoring wells and analyzing them for VOCs. This modification was approved by NDEP on November 3, 2017.
- RI Phase 2 Modification No. 10, dated February 26, 2018, proposed additional surface water sampling for perchlorate at locations within Las Vegas Wash to improve understanding of perchlorate mass loading. This modification was approved by NDEP on May 2, 2018.

- RI Phase 2 Modification No. 11, dated May 23, 2018, proposed soil gas sampling for volatile organic compounds at locations identified in Operable Unit 1 (OU-1) and Operable Unit 2 (OU-2). Soil gas and groundwater results will be used in the Baseline Health Risk Assessment evaluation in OU-1 and the NERT Off-Site Study Area in OU-2 to evaluate potential health risk from vapor migration from the subsurface to indoor or ambient air. This modification was approved by NDEP on June 21, 2018.
- RI Phase 2 Modification No. 12, dated July 17, 2018, proposed soil, soil gas, and groundwater sampling at locations identified in Parcel E to fill data needs for the Baseline Health Risk Assessment (BHRA) for Parcel E. This modification was approved by NDEP on July 19, 2018.
- RI Phase 2 Modification No. 13, dated August 8, 2018, proposed additional deeper investigation borings and deeper monitoring wells along the future NERT Site downgradient (northern) property boundary to better delineate the lateral extent of a permeable zone within the Upper Muddy Creek formation between approximately 60-70 feet below ground surface and the vertical extent of perchlorate and other COPCs in the subsurface. This modification was approved by NDEP on August 14, 2018.
- RI Phase 2 Modification No. 14, dated September 11, 2018, proposed changes to the surface water sampling at locations within Las Vegas Wash and nearby tributaries to improve the understanding of perchlorate mass loading. Specifically, increasing the number of samples along transect LVW5.3 from three locations to six locations and monthly sampling at two new locations associated with Chimera Golf Course subdrains, and a slight modification to the location of sample LVW 8.85. This modification was approved by NDEP on September 12, 2018.
- RI Phase 2 Modification No. 15, dated November 13, 2018, proposed additional deeper investigation borings and deeper monitoring wells in Area 1 (the former AP-5 Pond) at the NERT Site to better delineate the vertical extent of perchlorate and other COPCs in the subsurface. This modification was approved by NDEP on November 15, 2018.
- RI Phase 3 Modification No. 1, dated August 28, 2017, summarized the well inspection program findings conducted in the Eastside Sub-Area within the Eastside Study Area and proposed an additional six well installation locations. This modification was approved by NDEP on May 1, 2017.
- RI Phase 3 Modification No. 2, dated April 9, 2018, proposed three additional field activities. Specifically, 1) installation of ten wells (locations NERT5.91S1, NERT5.49S1, NERT5.11S1, NERT4.93S1, NERT4.71S1, NERT4.51S1, NERT4.38N1, NERT4.21N1, NERT3.80S1, NERT3.65S1) on Bureau of Reclamation and Clark County properties; 2) one-time sample collection from two subdrains identified north of the Chimera Golf Course; and 3) collection of additional groundwater samples from seven City of Henderson (COH) wells (M-16, MW-17, MW-19, MW21R, MW-22, MW-23, and MW-24). This modification was approved by NDEP on April 12, 2018.

- RI Phase 3 Modification No. 3, dated May 29, 2018, proposed conducting nuclear magnetic resonance (NMR) logging at the request of NDEP in 139 wells along the operable unit (OU) boundaries of OU-1, OU-2, and OU-3 and in areas of interest such as the Interceptor Well Field (IWF), the Athens Road Well Field (AWF), and along the Las Vegas Wash. This modification was approved by NDEP on June 8, 2018.
- RI Phase 3 Modification No. 4, dated November 13, 2018, proposed advancing four deep soil borings and installing up to nine groundwater monitoring wells adjacent to the RI Phase 3 Transect D series soil borings to obtain data to evaluate the presence of NERT-related COPCs within and below the paleochannel eroded into the Upper Muddy Creek formation. This modification was approved by NDEP on November 15, 2018.
- RI Phase 3 Modification No. 5, dated November 13, 2018, proposed three additional deep soil borings upgradient of the Seep Well Field (SWF) to better delineate the lateral and vertical extent of perchlorate and other NERT COPCs in deeper UMCf soils (i.e., greater than 50 feet bgs). This modification was approved by NDEP on November 16, 2018.

Rollover and Continuation of 2018 Subtasks: Generally, this scope of work is a continuation of the 2018 scope of work for this task but expanded as noted above. This task includes a rollover budget of \$383,000. No 2018 subtasks were removed. The following subtasks were included in the 2018 scope of work and are also included in the 2019 scope of work, with some modifications:

- Phase 1 RI DVSR / EDD Submittals. DVSRs and EDDs for the Phase 1 RI field investigation were submitted to NDEP in four separate submittals in 2017 and 2018. The asbestos, soil gas, and groundwater DVSR / EDD submittals were approved by NDEP in 2018. The soil submittal is under NDEP review. This scope of work includes addressing NDEP comments and submitting a revised document to NDEP for the Phase 1 RI soil DVSR/EDD submittal currently under NDEP review. (\$10,000 rollover budget)
- Phase 2 RI DVSR / EDD Submittals. DVSRs and EDDs from the Phase 2 RI field investigation will be compiled, reviewed, and submitted to NDEP in 2019. This will include two phased submittals of Phase 2 soil and groundwater results, with the exception of data from Parcel F, which was submitted to NDEP in Fourth Quarter 2017. This task also includes responding to NDEP comments and submittal of revised Phase 2 RI DVSR/EDD deliverables. (\$45,000 rollover budget)
- Phase 3 RI DVSR / EDD Submittal. A DVSR and EDD from the Phase 3 RI field investigation will be compiled, reviewed, and submitted to NDEP in 2019. This will include a single submittal of all Phase 3 soil and groundwater results. This task also includes responding to NDEP comments and submittal of a revised Phase 3 RI DVSR/EDD deliverable. (\$35,000 rollover budget)
- Phase 2 and Phase 3 RI Modifications DVSR / EDD Submittals. DVSRs and EDDs from Scope Modifications No. 6, No. 11, No. 12, No. 13, and No. 15 to the Phase 2 RI field

investigations and Scope Modifications No. 4 and No. 5 to the Phase 3 RI field investigations will be compiled, reviewed, and submitted to NDEP in 2019. It is anticipated these will be combined in to two phased deliverables. This task also includes responding to NDEP comments and submittal of revised DVSR/EDD deliverables. (\$35,000 rollover budget + \$10,000)

- 2018 Field Events DVSR / EDD Submittal. DVSRs and EDDs containing the data from the RI Phase 1 AP-5 area soil investigation, ZVI Treatability Study, AWF Evaluation, and Dioxin-Impacted Soil investigation and excavation will be compiled, reviewed, and submitted to NDEP in 2019 in two phased deliverables. This task also includes responding to NDEP comments and submittal of revised DVSR/EDD deliverables. (\$40,000 rollover budget)
- ZVI Treatability Study Additional Data Validation. Based on NDEP data validation guidance issued on July 13, 2018, analytical data from the ZVI Treatability Study that were previously validated to Validation Stage 2A will be validated to Stage 2B, with at least 10% of the data validated to Stage 4. This scope of work includes generation of Level IV data packages by the analytical laboratory. (\$10,000 rollover budget)
- RI Phase 2 and 3 Data Evaluation. Continuing evaluation of the RI data collected in 2016-2018 includes activities such as 1) analysis of the slug testing data, 2) preparation of data summary tables and preliminary data displays, and 3) preparation of preliminary subsurface cross-sections and updating existing cross-sections with the RI Phase 3 results. To the extent feasible, this evaluation will incorporate the principles of environmental sequence stratigraphy as outlined USEPA's September 2017 issue paper for Best Practices for Environmental Site Management. This RI data evaluation task includes an evaluation of the nature and extent of COPCs in groundwater. Existing and new information on aquifer properties will be compiled that will include estimates of groundwater gradient, flow velocities, and an evaluation of vertical head differences at well cluster locations. The 2019 scope of work includes additional effort anticipated to perform ongoing data evaluation related to the expansion of the Phase 2 and Phase 3 RI field investigations, as described in 15 Phase 2 RI modification and five Phase 3 RI modification documents. (\$50,000 rollover budget + \$165,000)
- OU-1/OU-2 RI Report Preparation. This report will include 1) a comprehensive description of the area that comprises OU-1 and OU-2; 2) a brief Site history (including the NERT Site and the Eastside Sub-Area) and discussion of the origin of contamination to provide rationale for the characterization activities completed; 3) summaries of field investigations and relevant Site characterization data, including historical data used to support the CSM; 4) a synthesis of previous groundwater investigations that will also incorporate the results of additional work conducted for the RI; 5) a summary of Tetra Tech's Unit Building 4/5 investigation and integration into the RI report (as an appendix); and 6) an updated CSM for the Site, revised to

incorporate additional information obtained through the RI process. The 2019 scope of work includes continuation of efforts in progress for the preparation of the OU-1/OU-2 RI Report, as well as additional effort anticipated to incorporate data and analyses from the 20 RI modifications into the OU-1/OU-2 report. Since the magnitude and significance NDEP comments which may be received on the OU-1/OU-2 RI report are unknown, the level of effort to address NDEP comments cannot be estimated at this time. Therefore, the scope of work and budget estimate for this task does not include addressing NDEP comments, revision of the OU-1/OU-2 RI Report, or preparation of a response to comments summary. A separate budgetary request to perform these efforts will be made to the Trust following receipt of NDEP comments on the OU-1/OU-2 RI Report. (\$138,000 rollover budget + \$360,000)

- Coordination with Other Parties. The interpretations of subsurface conditions in the NERT RI Study Area will incorporate data developed by other parties and, to the extent feasible and appropriate, will need to be consistent with interpretations developed by others. This task will be focused in two areas: work conducted on behalf of the Trust, and work conducted for other BMI parties. To provide a consistent interpretation of subsurface conditions at the NERT Site, this task includes communications with Tetra Tech regarding their findings, particularly in the vicinity of Unit Buildings 4/5, as well as coordination with other BMI parties. The BMI party coordination will likely include responding to comments provided by OSSM related to encroaching VOCs on the west side of the NERT site and by Landwell/BRC related to interpretations within the Eastside Sub-Area. The 2019 scope of work includes continuation of coordination efforts in progress, as well as additional effort anticipated as the work performed by other parties has further developed throughout 2018 and additional data and information is available from these other parties. (\$10,000 rollover budget + \$42,000)

New subtasks for 2019 include:

- Perchlorate and Chromium Mass Estimate. In November 2018, a perchlorate and chromium mass estimate report was submitted to NDEP as an appendix to the *2018 Annual Remedial Performance Report for Chromium and Perchlorate* and is currently under review. This report provided an updated comprehensive mass estimate for perchlorate and chromium present in the NERT RI Study Area, including the Eastside and Downgradient Study Areas using an approach described in an October 2017 Technical Memorandum. The mass estimates presented in this report are based on data available in advance of preparation of the report; however, RI data, from the Phase 3 RI and other investigations, continues to be collected and evaluated. These mass estimates will be refined as additional data becomes available and revised mass estimates will be prepared and presented in the OU-1/OU-2 RI Report. This update will include the complete results of the RI Phase 2 and Phase 3 sampling that is currently in progress, and the results from recently initiated pilot and treatability



studies being conducted by the Trust, including the Las Vegas Wash Pilot Test for Downstream Reduction of Perchlorate Flux, Galleria Drive Bioremediation Treatability Study, and the Galleria Drive Zero Valent Iron (ZVI) Treatability Study. As part of this update, an evaluation of the uncertainty in the mass estimates will be provided. (\$150,000)

- NMR Data Evaluation. In 2018, Nuclear Magnetic Resonance (NMR) data was collected from more than 130 monitoring wells in the NERT RI Study Area. This scope of work includes evaluation and interpretation of the NMR data for incorporation into the OU-1/OU-2 and OU-3 RI Reports. This evaluation is anticipated to include 1) developing a site-specific correlation between NMR results and Phase 2/3 RI hydraulic conductivity measurements, 2) use of the NMR results to refine estimates of soil physical properties, such as porosity (which would then be used in preparation of the revised mass estimate), and 3) use of grain size estimates from NMR logs in the environmental sequence stratigraphy analysis. (\$85,000)
- Surface Water Data Evaluation and Reporting. Monthly surface water sampling is conducted at locations along Las Vegas Wash and at selected outfalls to the C-1 Channel (funded through Task M15). This scope of work includes reviewing preliminary sampling results, preparing a figure on a monthly basis with the results for submittal to NDEP, and responding to NDEP questions and comments. In addition, the data will be used to evaluate perchlorate mass loading to the Wash from groundwater discharges along different reaches. (\$60,000)
- Downgradient Study Area Data Evaluation and Integration. Throughout 2016-2018, data have been collected from various field investigations as part of the Downgradient Study Area Investigation under NDEP direction and as part of various treatability studies performed by the Trust in the Downgradient Study Area. This scope of work includes efforts to incorporate data from these studies with data collected in OU-3 as part of the Phase 3 RI, and holistically evaluate and interpret these data as a single comprehensive data set. Since it is anticipated that AECOM's scope of work will be completed in late 2018, the scope of work for this subtask includes participation in a technical meeting with AECOM to facilitate a smooth transition of project knowledge and information. (\$92,000)
- OU-3 RI Data Evaluation and Reporting. Although preparation of the OU-3 RI Report is primarily anticipated to take place in 2020, this scope of work in 2019 includes initiating evaluation and reporting of the RI data collected in OU-3 such as 1) analysis of the slug testing data, 2) preparation of data summary tables and preliminary data displays, 3) preparation of preliminary subsurface cross-sections and updating existing cross-sections with the OU-3 results, 4) development of a preliminary CSM, and 5) preparation of preliminary draft OU-3 RI report text. The OU-3 RI Report will incorporate the results of NDEP's Downgradient Study Area Investigation currently in

progress by AECOM and will include an evaluation of current and potential future migration of COPCs in groundwater to Las Vegas Wash. (\$375,000)

Assumptions:

- With the exception of the DVSR/EDD submittals discussed above, no interim RI deliverables are planned.
- To date, 15 Phase 2 RI modification documents and five Phase 3 RI modification documents have been approved by NDEP. The budget estimate for this work does not include possible additional effort related to future RI modifications.
- As noted above, the scope of work and budget estimate for this task does not include addressing NDEP comments, revision of the OU-1/OU-2 RI Report, or preparation of a response to comments summary.
- Separate reports will be prepared to present the analyses and results of the human health and ecological risk assessments, based on the updated CSM. These efforts are under Tasks M06A and M06B, respectively.
- A separate report will be prepared to submit the groundwater model to NDEP. Efforts associated with the groundwater model development, refinement, and reporting are under Task M07.
- At the direction of the Trust, the budget estimate includes funding for up to two trips for up to four staff persons to travel to Las Vegas for presentation and discussion with the Trust of RI results and for one trip for up to three staff persons to travel for a transition meeting with AECOM.

Anticipated Schedule: Work on this task will continue throughout 2019 and is anticipated to continue into 2020. Following submittal of the OU-1/OU-2 RI Report to NDEP in second quarter 2019, work will continue on data evaluation for inclusion in the future OU-3 RI Report.

Deliverables to NDEP on this task in 2019 are anticipated to include:

- First Quarter 2019: DVSRs/EDDs for the Phase 2 RI field investigation data.
- First Quarter 2019: DVSR/EDD for the Phase 3 RI field investigation data.
- Second Quarter 2019: DVSR/EDDs for the Phase 2 and Phase 3 RI Modifications data.
- Second Quarter 2019: DVSR/EDD of RI Phase 1 AP-5 area soil investigation and Dioxin-impacted soil investigation and excavation data.
- Second Quarter 2019: DVSR/EDD of the ZVI Treatability Study and AWF Evaluation data.
- Second Quarter 2019: OU-1/OU-2 RI Report

Budget Information: The estimated budget for this task is based on the effort required for subtasks in progress from 2018 (estimated rollover budget of \$373,000) and the additional subtasks identified above (estimated expanded scope budget of \$1,339,000). Based on this

scope of work, the estimated total 2018 budget for this task is \$1,712,000. This budget estimate includes approximately \$30,000 for data validation subcontractor costs. No contingency has been added to the budget. It is anticipated that activities on this task will continue into 2020, with a new scope of work and budget estimate to be developed for this task in 2020.

<b>M08 – RI Data Evaluation and Reporting</b>				
2018 Approved Budget	Anticipated 2018 Budget Used by 12/31/2018	Anticipated 2018 Rollover Budget	2019 Budget Requested for Expanded Scope	Total 2019 Budget Requested
\$1,442,000	\$1,069,000	\$373,000	\$1,339,000	\$1,712,000

#### **005A – Cost Recovery and Allocation**

Task Description: As part of this task, Ramboll will provide consulting assistance to the Trust for the compilation of 2018 project costs related to the production of chlorate or perchlorate, to support the Trust's submittal to the United States Department of Defense (USDOD) of the Eighth Payment Demand for response costs pursuant to the 2006 Henderson Consent Decree and Substitution and Clarification Agreement. In addition, Ramboll will provide consulting assistance to the Trust for the response to USDOD questions and comments on the previously submitted payment demands, as requested.

Comparison to 2018: The scope of work planned for 2018 was expected to be similar to 2017; however, the Trust opted to reallocate some of Ramboll's effort to Foley and Lardner, LLP, thus, Ramboll's level of effort for 2018 was significantly less than budgeted. The 2019 scope of work is similar to the actual 2018 scope of work completed for this task. No subtasks have been added or removed.

Assumptions:

- No travel is budgeted for this task.

Anticipated Schedule: Work on this task will proceed throughout the year. A draft of the compilation of 2018 project costs is anticipated to be provided to the Trust's legal counsel in the second quarter 2019 and revised and finalized in the third or fourth quarter 2019. There are no NDEP submittals anticipated for this task.

Budget Information: Based on this scope of work, the estimated 2019 budget for this task is \$20,000. There are no subcontracted services for this task and no contingency has been added to the budget. It is anticipated that activities on this task will continue into 2020, with a new scope of work and budget estimate to be developed for this task in 2020.

<b>005A – Cost Recovery and Allocation</b>		
2018 Approved Budget	Anticipated 2018 Budget Used by 12/31/2018	2019 Budget Requested
\$40,000	\$12,000	\$20,000

### 3.1 Summary of New Budgets for Continuing Tasks

Table 3 below provides a summary of the new budgets for continuing tasks.

<b>TABLE 3: SUMMARY OF NEW BUDGETS FOR CONTINUING TASKS</b>				
<b>Task</b>	<b>Title</b>	<b>2018 Approved Budget</b>	<b>Anticipated 2018 Budget Used by 12/31/2018</b>	<b>2019 Requested Budget</b>
F03	Site Management Plan	\$34,000	\$29,000	\$34,000
F04	Consent Agreement Scheduling and Reporting	\$48,000	\$21,000	\$42,000
F05A	NDEP Relations	\$12,000	\$5,000	\$12,000
F05B	Stakeholder Relations	\$180,000	\$144,000	\$210,000
H04	Data Verification and Management	\$282,000	\$249,000	\$300,000
H05	Data Evaluation and Reporting	\$563,000	\$562,000	\$563,000
H07	Monitoring Well Repairs	\$195,000	\$126,000	\$125,000
H08	Database Management, Maintenance, and Accessibility	\$262,000	\$247,000	\$285,000
J02	Permit Compliance and Reporting	\$143,000	\$113,000	\$125,000
J03	GWETS Data Management and Evaluation	\$118,000	\$95,000	\$95,000
L01	Community Involvement	\$82,000	\$82,000	\$79,000
M06A	Human Health Risk Assessments	\$590,000	\$444,000	\$646,000
M06B	Ecological Risk Assessments	\$244,000	\$175,000	\$1,752,000
M08	RI Data Evaluation and Reporting	\$1,442,000	\$1,069,000	\$1,712,000
O05A	Cost Recovery and Allocation	\$40,000	\$12,000	\$20,000
<b>Totals</b>		<b>\$4,235,000</b>	<b>\$3,373,000</b>	<b>\$6,000,000</b>

#### 4.0 Closing

Detailed budget estimates are provided in Attachment A.

We appreciate the opportunity to provide continued service to the Trust and look forward to working with you in 2019. Please let us know any questions or comments you have on this 2019 scope of work.

Yours sincerely,

**Kimberly Kuwabara, MS**  
Senior Managing Consultant  
CEM #2353, expires 3/20/2019

**John M. Pekala, PG**  
Principal  
CEM #2347, expires 9/20/2020

**Allan J. DeLorme, PE**  
Principal

#### ATTACHMENTS

**Attachment A**  
2019 Task Budget Estimates

**ATTACHMENT A  
2019 TASK BUDGET ESTIMATES**

**DRAFT**